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how should we live together?

collaborative housing in a circular ecosystem

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Abstract

Humanity faces challenges on a global scale that put the well-being of the planet, nature and society in danger. Answering these challenges collectively is crucial, we have to put life and its thriving at the center of our efforts. Socially and environmentally sustainable housing is a challenge on a global scale. If we find ways to change it, due to its size it can also create a huge positive impact.

In this paper we are looking for collective living models that can have a positive impact on our lives and the life of our planet.

We define the ecosystem as our starting point and model: we link it to the concepts of space, circularity and commoning to arrive at the idea of a collaborative ecosystem that we define as a good place to live.

We build on the existing forms of collaborative housing and use a systemic approach to define the drivers of successful projects.

We begin with the ideas and ideals that are associated with home and we regard architecture as infrastructure that can form a frame for the opportunities of the ever changing living conditions. We point out the importance of the direct environment by introducing the theory of the 15-minute city and the 1-minute city. We argue that these can result in an expanded living environment that has a direct effect on the quality of peoples life.

We then explain how interaction is based on trust, that it is partially built by structured interactions, but also by organizational strategies that facilitate opportunity for access to housing. The collaborative housing projects can be regarded as adaptable experiments built on collaborative governance systems, prioritizing stewardship over ownership and separating land cost and housing cost.

In the final chapter we propose design tools to shape the ‘in-between’ spaces in order to facilitate sharing while still maintaining the ideas associated to home. These tools are related to boundaries and thresholds, the centers identity, purpose, necessity and quantity.

In conclusion the changing role of architecture is defined as creating fertile ground for interaction which enriches the lives of inhabitants. With the application of the outlined strategies (defining home, creating opportunity, using the potential of proximity, building trust and activating in-between spaces) at all scales of spatial design, we create the opportunity to design a more equitable, healthy, and sustainable future for us all.

The theoretical part is completed with highlighting successful examples of collaborative housing projects in the Netherlands and abroad. These projects underline the ideas described in the paper and inspire to further thinking about the question:

How should we live together?

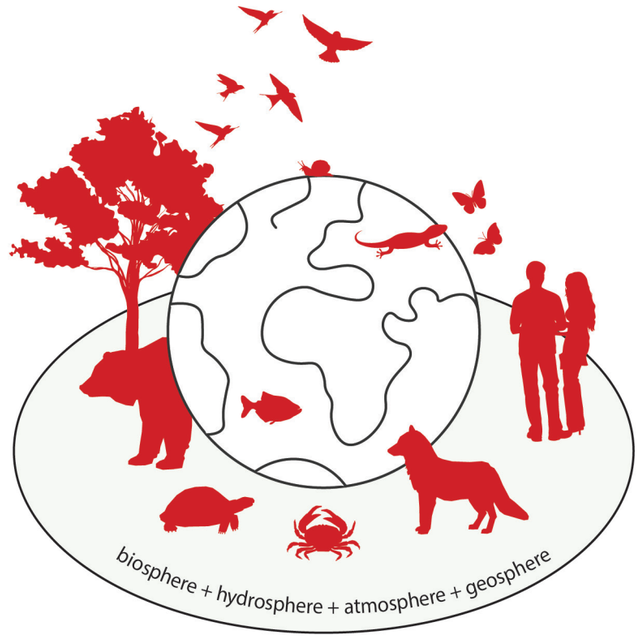


figure 1 a thriving planet

"What's the use of a fine house if you haven't got a tolerable planet to put it on?"

— Henry David Thoreau

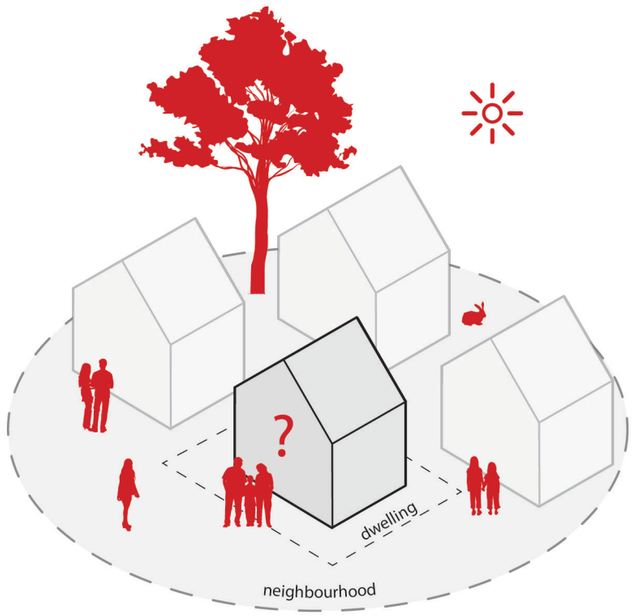


figure 2 How should we live together?

"We need to stop seeing people & homes as a problem to be solved, but as a resource to be unlocked."

—John Turner

0.1
How should we live together?

It is a fascinating time to be alive: as a species, we have the wealth, the means, and the emotional drive to define and express ourselves as individuals in many powerfully fulfilling ways. The pace of technological, medical, and industrial progress over the last 70 years has led to a world that is more equal: there is less poverty, we have better health and we're living longer lives (Pinker, 2019).

But our methods of success are also breaking the world. Patterns of individualization, neoliberal consumerism, short-termism, and extractivism are instigating overlapping issues that threaten the health and well-being of people and all life on the planet. These are structural systemic issues (Czischke, Moor, Ruby, Ryan-Collins, 2021), 'wicked problems' that need serious attention and world-wide effort to solve. And as the stakes become higher, as these problems become worse, we seem to be doubling down on their cause: shifting away from addressing our problems collectively to addressing them individually (Monbiot, 2021).

We have to work together; collaborate to make a better world where we put life and its thriving at the center of all our efforts. That is the goal of this report. And in order to work well together, we also need to live well together, creating patterns of human life that are socially and environmentally sustainable.

These patterns all start with our homes – housing is an issue that we all have stake in, so it has the power to link all scales of engagement: from government down to each individual. We need our housing to create real physical connection with the people and places around us - unleashing possibilities for efficiency, community, and vibrancy. We need our housing to offer us chances to make our lives better - locations of variety, interactivity, and opportunity. And at the same time we need to acknowledge and support the honest drives behind our individualism, that we all deserve to be supported in ways that make our lives better.

How can we create forms of housing that support individual well-being while also reinforce patterns of living that bring people together? How can we scale up these solutions so that they don't remain niche, but that they become the dominant pattern for the massive amount of housing development we'll see in the next decades?

There is no singular answer to these questions, but in the following chapters we will outline a set of qualities and methods of addressing the systemic factors that influence them. Together as a society we must choose ways to redirect our physical and organizational context, tilting the scale towards a variety of collaborative living models that can make a positive impact for ourselves and the world around us.

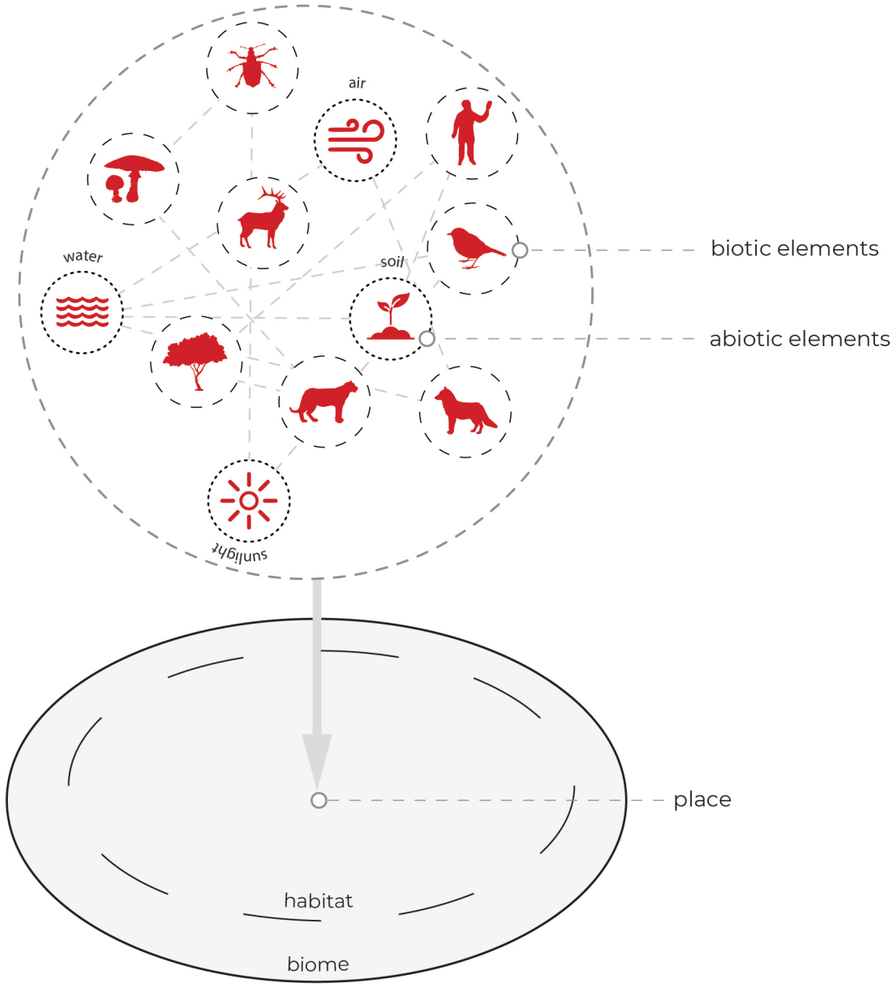


figure 3 a natural ecosystem

"No phenomenon can be isolated, but has repercussions through every aspect of our lives. We are learning that we are a fundamental part of nature's ecosystems."

— Arthur Erickson

0.2
A Collaborative Ecosystem

We will begin with a concept, one that conveys our vision of a beneficial pattern of life for humanity. Since our aim is to design diverse, inclusive, and sustainable places to live, there is no better place to start than with the word 'ecosystem' - in this case, a 'collaborative ecosystem':

Ecosystem

An ecosystem can be a metaphor-based model, referring to interrelated and evolving networks. It can also be a statement of 'value' that signifies planetary entanglement in which human, machines, ecological systems are increasingly indivisible (Johar, 2022). But it is also a fundamental reality: humans are not separate from nature, we live on Earth, and we rely on ecosystems to survive just like every other living thing.

As a conceptual tool, the following attributes are particularly important:

- **An ecosystem is a place:** it provides supportive living conditions for life forms
- **An ecosystem is a balanced network of living and non-living components:** it is resource-focused, there is no waste, only renewal based on entangled relationships
- **An ecosystem evolves:** adaptable in response to disruption due to its diversity, becoming more complex and resilient in response

Among all of the organisms that live in ecosystems, humans are unique in that we have the power to shape the resources around us. And in this shaping, we can choose to work together, countering our individualistic tendencies to craft places that create positive impact for both humans and non-humans.

The Solution is [Always] Spatial

A core component of designing any ecosystem is physical space (Figure 3). Despite our technological advances or our focus on information, media, and knowledge, our lives are decidedly physical. As succinctly put by author Matt Haig, *"We do not have bodies, we are bodies. This line we draw between our minds and bodies makes no sense... it's time to rejoin the two parts. It's time to accept our whole human self"* (Haig, 2021). The same is true for the spaces that we design - everything that we do has a spatial impact.

For instance, in terms of resource use, the location, form and scale of any design project will lock in physical material uses, patterns of energy consumption, transportation requirements, and social connectivity potential. A systemic intervention in resource use such as sustainability must therefore include the strategic use of space if it is to make an impact. This suggests simple passive design methods (ie. 'dumb' not 'smart' solutions) as a basis - a methodology based on physical space.

Space as infrastructure

Thinking of space in this systemic way prompts us to consider it as a performative 'infrastructure' within our increasingly complex and intertwined environment. Space connects, interacts, and adapts to our

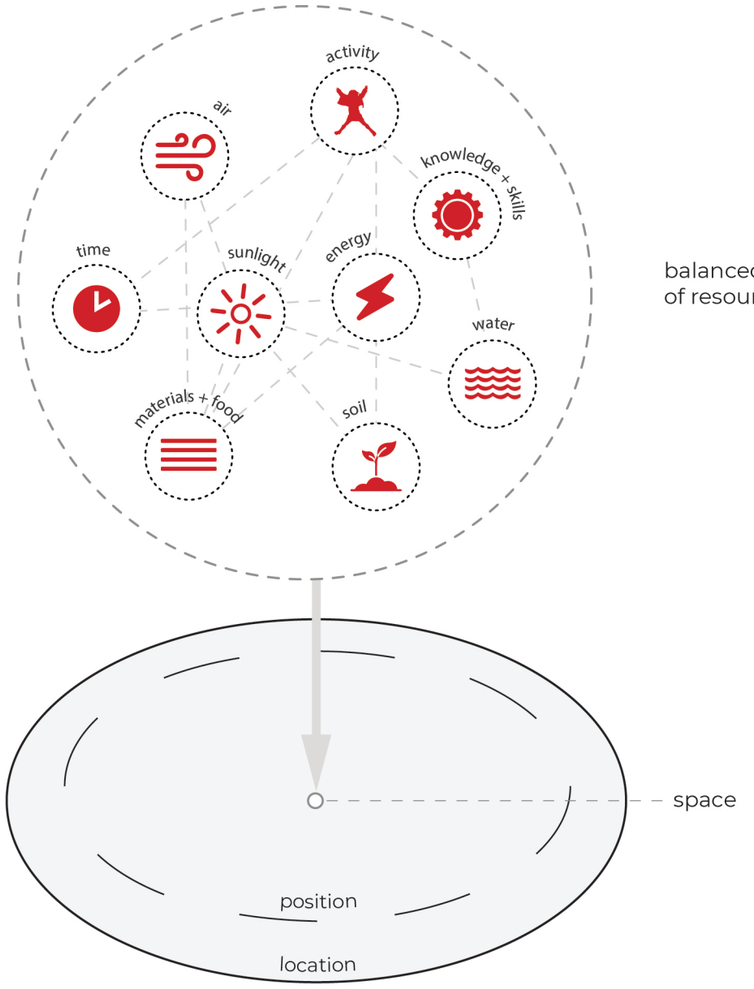


figure 4 a nature inspired collaborative ecosystem

"We don't need new technologies or new ideas; we need the will, foresight and courage to use the best of the old ideas."

— Shoshanna Saxe

changing needs (White, 2012). Space can facilitate movement and flows of people, materials and energy, acting as a 'service' that supports us. Just like clean water, the spaces around us can help us lead healthy and fulfilling lives.

This idea of infrastructural flow also leads us to consider how the design of the space around us affects the flow of resources around the world. The construction of any building is "a global act with social, political, economic, and ecologic implications' (Moe, 2021) - and it is all driven by the spaces that a building creates. The realization of the scale of this impact is pushing the design industry toward infrastructural management frameworks such as 'Urban Metabolism' and 'The Circular Economy'. These approaches seek to model and intervene in sourcing and supply chains to avoid negative externalities such as pollution and waste. Taking this into account, *spatial circularity* is a useful description of our aims.

However, this infrastructural view must also include the ideas of human accessibility and interaction along with these more technical notions of resource use. The concept of 'commoning' is helpful in this regard.

'Commoning' goes farther than ideas of 'community' or 'sharing' by focusing on actions: the production or management of collective cultural and physical resources among a group of people (Bhatia). These actions always involve participation and negotiation (bottom-up organizational frameworks), and also refer to the user-managed spaces necessary for these actions to be carried out (Chang, Johar, 2022).

A Collaborative Ecosystem

The concepts of 'space', 'circularity', 'metabolism', and 'commoning' are all important levers for systemic action at multiple scales. The main attributes of these concepts are strongly related to those of an ecosystem, hence the use of this word as a description of our methodology. How can we introduce collaboration to this nature inspired ecosystem?

A fundamental attribute of collaboration is that it is goal-oriented. And in this regard, all of the frameworks mentioned so far are only useful if they are paired with a firm goal. Since systemic strategies have the power to intervene on a global level, the goal of a 'balanced, thriving Earth for all living things' seems most relevant. A concept by the name of 'The Doughnut Economy' addresses this aim by proposing an economic development compass that replaces the typical 'Gross Domestic Product'. It creates boundaries that prioritize the support of planetary health and human quality of life (Raworth, 2017), and is therefore well-suited for our approach.

And so with the addition of this goal we arrive at our concept: **a collaborative ecosystem** (Figure 4).

Indicating both a methodology and a spatial reality, we envision a collaborative ecosystem as a networked series of physical places on all scales that work together. It allows us to use resources in a way that enhances individual, social and ecological health and well-being for all life on the planet. **In short, a collaborative ecosystem is a good place to live.**

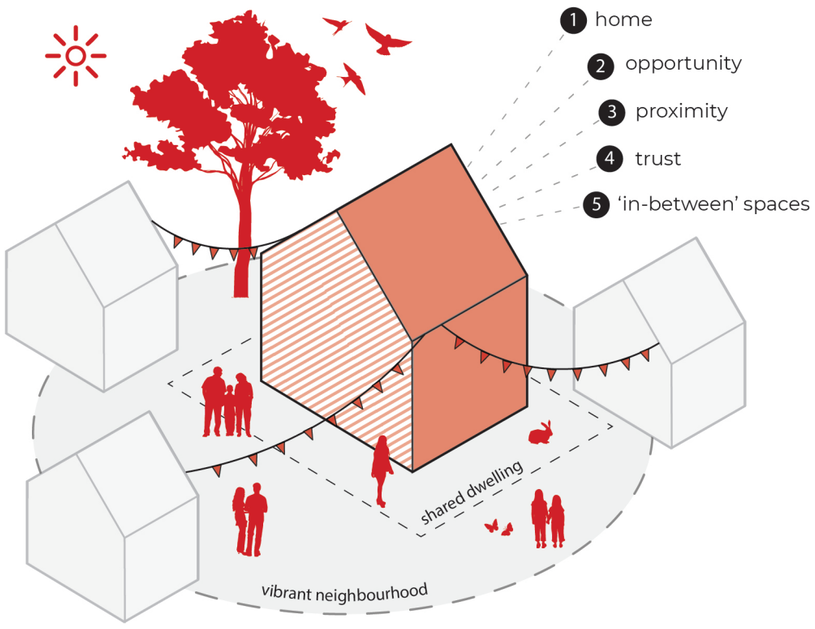


figure 5 How should we live together?

“First life, then spaces, then buildings. The other way around never works.”

— Jan Gehl

0.3
A Collaborative Form of Dwelling

Now that we’ve defined a ‘collaborative ecosystem’, we can begin to discuss how this concept can be applied to dwelling forms.

Many typologies of alternative forms of housing exist. These were particularly popular during the countercultural movements of the 1960s, 70s, and 80s. In US context, the hippie movement led to idealistic collective living movements such as communes. In European context, the squatter movement led to an explosion of ‘co-living’ or ‘co-housing’ forms that were a response (or a formalization) of these squatter groups (Czischke et al, 2021).

In this report, we are not proposing a rejection of the current social order. If ideas of collaborative living are to be scalable, they need to engage with the largest variety of people possible. Counter-culture or anarchist movements - while proposing collective good - actually demand a level of individualistic idealism and cultural conformity. While it is abundantly clear that our current political, economic, and social structures are not correctly addressing the challenges that we face, a proposal to ‘burn them to the ground’ is not the goal of this report.

Instead, following our description of ‘ecosystems’, we propose an *evolution instead of a revolution* (Marciniak, 2020). The opportunity for collaborative living is under-represented in our current systems. We need to change our social, legal, financial, and governance structures enough to allow for a variety of solutions to exist.

Additionally, many people feel that they would not want to share their homes for fear of loss of privacy, or of additional obligation, lack of flexibility, or lack of choice. These reservations are understandable, but not necessarily justifiable (co-housing, editorial). Models exist that can allow even the most private or introverted individual to benefit. These are not simply forms of apartment sharing or a step-up from student housing: well-designed collaborative living models allow people to build a vibrant community, raise a family, host family dinners, age in-place, and modify their living environment to suit their lifestyle. On one hand we might live on less land but on the other hand we also get the opportunity to gain *more* in terms of our quality of life.

Our goal is to encourage the reprioritization of space and budgets to provide real, inviting choices that offer everyone a chance to live in comfortable, supportive, and inclusive homes. To accomplish this requires a systemic approach that addresses the many-layered factors that influence our ideas of home and our ability to share - as illustrated by the structure of this paper and the diagrams within it.

In the following sections we will first consider what it means to have a ‘home’ – the concepts and feelings that people seek. While holding on to these notions, we will then translate them through the lens of a ‘collaborative ecosystem’, describing ideals of location, proximity, interaction, and space. We will then conclude with a series of reference projects that illustrate successful collaborative living forms, helping others imagine what the principles of a ‘collaborative ecosystem’ could mean in their own lives.

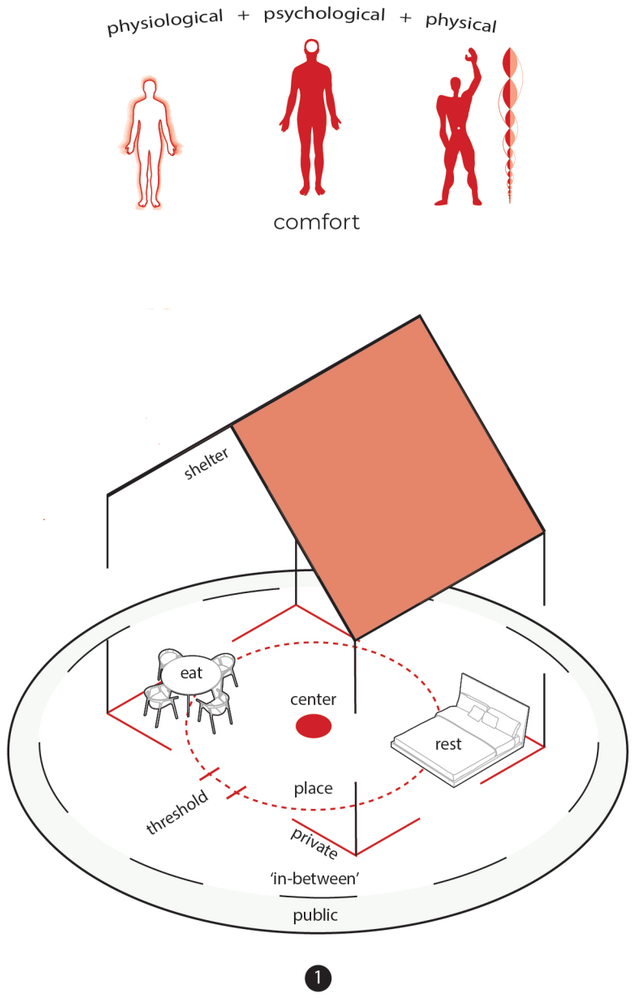


figure 6 home

"We need a home in the psychological sense as much as we need one in the physical: to compensate for a vulnerability...We need our rooms to align us to desirable versions of ourselves"

— Alain de Botton

1
Defining Home

Emotions + Ideals

A home needs to *feel* like a home.

A home is as much a mental / cultural construct as it is a physical place: it's a set of societal norms and personal beliefs that are deeply influenced by our experiences and observations: the way we live is who we are.

In the western world, the cultural idea of home is so deeply ingrained that children readily make drawings of this concept as the prototypical 'house' - a single family home - often despite the reality of their own living situation.

We've imbued this morphological archetype of 'house' with an almost mythological set of attributes; characteristics that we feel are necessary components of any home. Ideas of personal place, familial relationships, supportive communities and our identity within this context (status + 'place') - all surrounded with the urge to ground us, to provide stability or refuge: in a word, home is about **'roots'.**

Paradoxically, it is this 'single-family home' archetype that puts this idea of stability in jeopardy . Their dominance as a spatial strategy exacerbates affordability and environmental degradation, which in turn is creating climate discontinuity[1] and forced migration of urban populations (Botton, 2014) (Parvin, 2016) (Steffen, 2021).

To avoid these problems, it is crucial that we re-consider the physical form of our dwellings. But if we are to succeed, it's equally crucial to hold on to the mental **ideas and ideals** that people associate with home and comfort.

The following is a list of components that outline these fundamental emotional needs:

'I'm Home'
- Shelter: Safety
- Boundary: Public | Private
- Threshold: Control, Accessibility, Buffer-zones, paths, gardens, vestibules

'This is my place'
- Ownership: actual or perceived
- Agency: Adaptability, invitation, permission, responsibility, maintenance
- Ability to customize spaces, to make changes, to decorate

'I live there'
- Identity + Connection + Belonging to a neighborhood or community
- Access to people and things of value, defining who you are and shaping your daily life

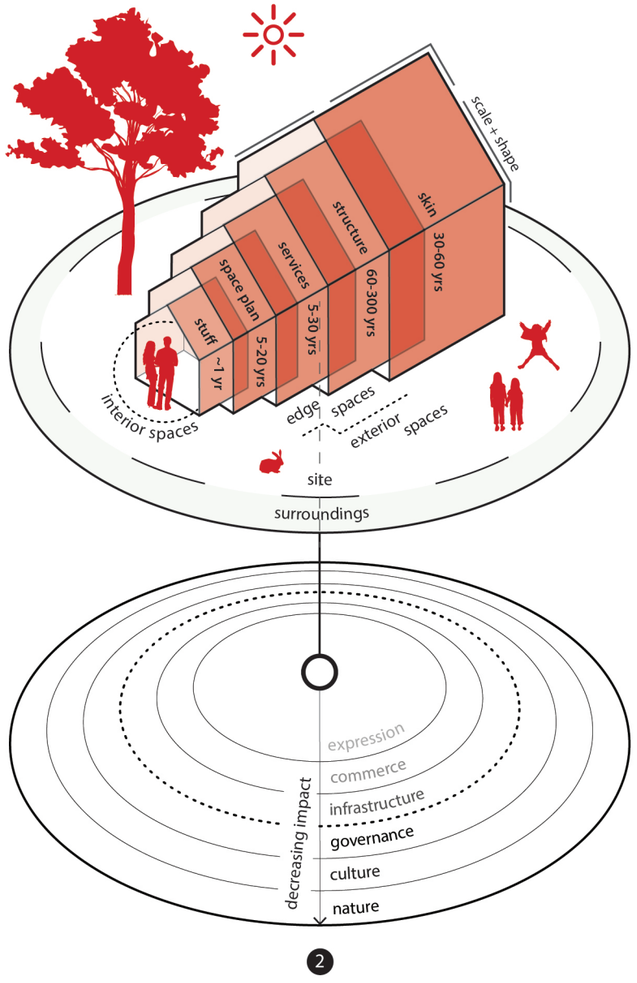
'Come over to my place for dinner'
- Interaction: pride, status, hosting
- Center: traditionally a hearth + mantle, a place of honour and welcome, denoting comfort and marking a significant place within the home
- Means: the ability to provide comfort to other - food, rest, and entertainment

These needs are each built on the feelings of security, autonomy, privacy and ownership.

Notes

1 Alex Steffen, climate futurist defines discontinuity as a moment where past experience loses its value as a guide to decision-making about the future. According to him the planetary crisis is a discontinuity and the longer we delay acting at disruptive speeds, the more discontinuous the near future will be with present expectations (Steffen, 2021).

image 1:
Oosterwold Housing, Almere NL
bureau SLA



physical form[2]

systemic form[1]

2

figure 7 opportunity

"It's very easy to study form. But architecture is actually the interplay between life and form. This is much more complicated to study. Form influences our way of living and using cities enormously."

— Jan Gehl

2

Overcoming Friction

Collaborative Strategy as an Opportunity

Now that we've established the fundamental features of a 'home', how do we translate them into collaborative forms of living? Just like the interaction of multiple moving parts in a machine, collaboration between people and the world around them needs to go smoothly if it is to work well. We have to create conditions that support the 'opportunity' to collaborate, in a sense this is similar to the idea of overcoming 'friction' between moving parts of a machine. If we aim to create opportunities, then the context, relationship frameworks, spaces and places around us can all be designed to facilitate collaboration.

At a macro scale, the potential human interactions that take place in the built environment are driven by many systemic forms, such as nature, culture, and governance (Figure 7, bottom).[1] Architecture, which acts at the level of a building, can only respond and redirect, rather than fully transform these forms.

But by engaging with the deepest systemic forms (nature, culture and governance), architecture overcomes the 'friction' of cultural expression and local commerce by fully engaging its context. In this way, architecture becomes infrastructure, as we discussed in Chapter 0.2 and shown as a dotted line in Figure 7.

At the level of a building (Figure 7, top) [2], this infrastructural layer impacts world-wide material flows, regional energy systems, and programmatic arrangements. At this scale, 'friction' comes in the form of actual movement: change is constant.

As eloquently put by Stewart Brand, *'A building is not something you finish, it is something you start.'*

The typical architectural approach of 'precious object' creation ignores this constant change instead of accommodating it. We can instead embrace the fact that our buildings are always just beginnings. We then create spatial circularity: spaces that are adaptive in their size, and use components that are (re) movable or (re)placable, changing as needs change and becoming almost a living thing on their own - full of *vitality* (Kegge, 2015). Space and the people who use it form a dialogue, collaborating to shape their interactions with each other.

But when we consider the idea of 'home', it is at this building / spatial level where our individualistic tendencies create the most potential for 'friction' with others. How can we design collaborative spatial dialogues with multiple people?

We can't compel anyone to use a space, but we *can* create the conditions to invite them to do so, and leave the rest up to them.

This creation of the right conditions is what makes the design of collaborative space so challenging. But we can approach this intelligently through our consideration of people. The following report sections engage this challenge through ideas of sociology and behaviour, creating the potential for a viable collaborative ecosystem.

Notes

1 The systemic forms mentioned here come from the idea of Pace Layers that originates from Stewart Brand who introduced them in 1999 as follows: "I propose six significant levels of pace and size in the working structure of a robust and adaptable civilization. [...] In a healthy society each level is allowed to operate at its own pace, safely sustained by the slower levels below and kept invigorated by the livelier levels above." They range from Nature (the slowest) to Fashion (the fastest) (Brand, 1999).

2 The concept of the Shearing layers was first formulated by architect Frank Duffy and later developed further by Stewart Brand and refers to building composed of 6 layers that change in a different pace because their different lifespans. In order to make change possible in buildings they should be designed with these layers independent from each other (Brand, 1994, Duffy, 1992).

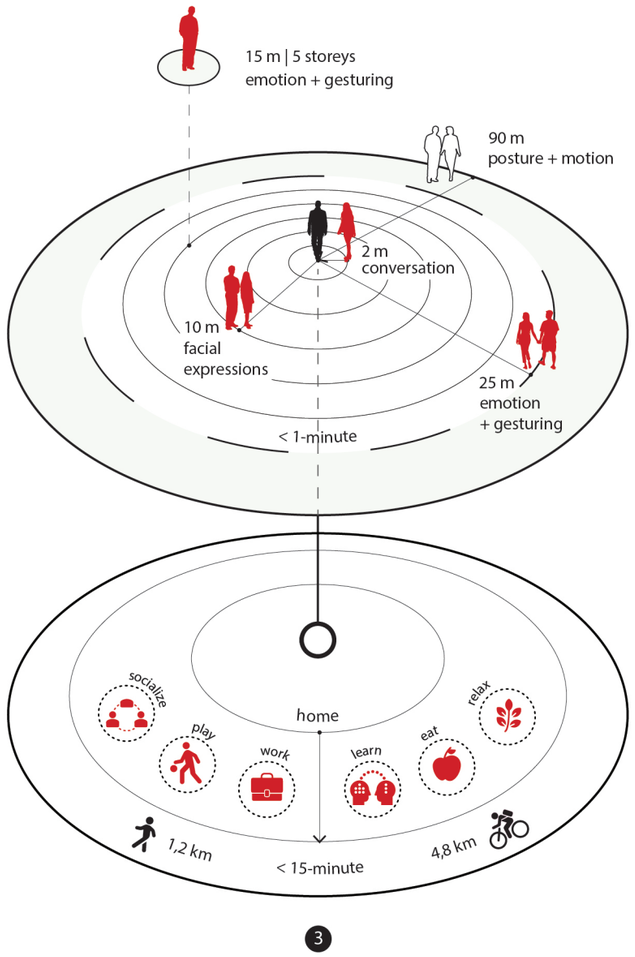


figure 8 human-scale proximity

"...so start with this: make a welcome of each door, a face of each window.
Make of each a place, a bunch of places of each house and each city
(for a house is a tiny city, a city a huge house)."

— Aldo van Eyck

3

Proximity is Potential

Collaborative Contexts

The Importance of Cities

Physical collaboration requires – at minimum – one simple element: proximity. We need to be close together and connected to interact; effective resource sharing cannot exist otherwise. Therefore, any place that brings people in close proximity has a high potential for collaborative behaviour.

In this regard, **cities are our greatest invention** – when properly designed they are collaboration and efficiency 'machines', allowing us to leverage mutual benefit and thrive (Sim, Gehl, 2019). The networked qualities of dense city life are a direct parallel to a natural ecosystems as described in chapter 1.1. This quality and its positive potential for cities is clearly described by Stewart Brand in this way:

*"In the city, life is exciting; work is less grueling; you're far better paid; you're free to move around and change jobs.... **City air makes you free. Cities are wealth creators**...[they] are so much more successful in promoting new forms of income generation, and it is so much cheaper to provide services in urban areas, that...the only realistic poverty reduction strategy is to get as many people as possible to move to the city.... **The city is [also] the most environmentally benign form of human settlement.** Each city dweller consumes less land, less energy, less water, and produces less pollution than their counterpart in settlements of lower densities*[1] *(Brand, 2009)".*

Returning to our concept of a collaborative 'ecosystem', when cities are designed in a dense way, they become interconnected and diverse: they are full of potential opportunity. Yet despite the apparent benefits, the creation of dense cities is far from our default solution.

Coupled with automobile dependency, our typical mode of 'city' development is low-density suburban areas, otherwise known as 'urban sprawl'. For instance, a full 52% of US residents describe their living conditions as suburban, whereas only 27% describe their living conditions as 'urban' (Kolko, Bucholtz, 2018).

By 2100, it is estimated that 85% of the world's population – over 9 billion people – will live in non-rural areas, suggesting a massive city-building boom in the coming decades. If we are to take our current social, environmental, and financial problems seriously, we have to make 'dense cities' the dominant living form for all this new development. But how do we give people the feelings of autonomy, privacy, and choice while maintaining density?

Livability

A major part of the answer lies in creating 'livable' urban conditions. Described by David Sim as a 'soft' city, the goals is to provide '*... ease and comfort, where density has a human dimension, adapting to our ever-changing needs, nurturing relationships, and accommodating the pleasures of everyday life*' (Sim, Gehl, 2019).

While there is no 'correct' numeric target for density that addresses both efficiency and livability, there is a set of definitive qualities related to the 'human dimension' described

Notes

1 The statement of Brand is true assuming that they are on the same level of development.

image 2: Delft

by David Sim. We can consider our physical bodies as the primary metric, and develop a sense of city-scale ergonomics or comfort, as shown in Figure 8 Let's investigate this point of view further.

Walking + Cycling

It all starts with our legs. Walking is the most democratic and inclusive form of transportation. Available to all ages and demographics, it is healthy and low cost and emissions-free. The fact that whether or not you *can and want* to walk somewhere can then be used as a primary indicator for a livable level of city density. For longer distances cycling has a very similar set of benefits and also adds increased range.

How do we decide whether we can walk or cycle somewhere? Proximity as a function of convenience and time – the 15-minute city and the 1-minute city – are the most common models to address this question.

The 15-Minute City (Moreno, 2020)
Figure 8, bottom

Although they are often considered to be related, proximity and density are two separate issues: unintelligent density leads to what urbanist Peter Calthorpe refers to as 'high-density sprawl'. If the things you need day-to-day are not close by, then even a high density city can be an inefficient (and unpleasurable) place to live.

The 15-minute city addresses this through deliberate distribution of program: proposing that all of a person's daily needs are accessible by a 15-minute walk or bicycle trip. This helps define your neighborhood and gives you the chance to live locally and support small businesses and services. '*[A] neighborhood is a state of being in a relationship*' (Sim, Gehl, 2019) - and as in any good relationship, both parties have to contribute positively: the places, programs, and resources present in a neighbourhood can have a large, positive impact on a person's quality of life.

The 15-Minute City model is radically different than the typical mobility / commerce-driven city configurations of the past because it places home at the center of its development patterns. The result is a fine-grained development and human-scale relationships between home and daily life. This makes it possible to walk or cycle everywhere we need, and the provided "network redundancy" offers substantial resilience to cities.

Paris, with its already famous livable low-rise density (it is 25% less dense than Manhattan) and its emissions efficiency has become a prominent champion of these ideas in the past two years, implementing a city-wide network of well-used cycle paths. The 'low-rise' form of density in Paris is a very important component of this discussion in terms of human interaction.

Tall buildings have their place in dense city design: they can provide a much-needed injection of population of any type of program within a relatively small spatial footprint. But a human-scale low / mid-rise development (less than 6 storeys) has the distinct advantage over

image: 3 Hendrikstraat, Amsterdam

image: Frans Halsstraat, Amsterdam

tall buildings when it comes to encouraging dense *livability*. This is largely because of their potential for connection to the street. It's relatively easy for an average person to climb up or down 6 storeys of stairs. Related to this is the fact that a resident with windows and balconies 6 storeys or lower in height has the distinct ability to observe other people on the street. Together, the observation and accessibility makes dwellers of low-rise buildings much more likely to venture outside and make use of the public realm. This in turn makes the street a more interesting and lively space, which again attracts more people (Gehl, 2011).

This self-reinforcing cycle is a fundamental component of livable city life, and a determinant of whether someone actually *wants* to walk or cycle to their destination, which is the goal of our next model, the 1-Minute City.

The 1-Minute City (Hill, 2020)
Figure 8, top

In his explanation of the concept, urbanist Dan Hill explains the 1-minute city model by stating a somewhat over-looked fact: *'the street is the basic unit of city: all systems converge on the street, all culture plays out there, one way or another'* (Hill, 2020). It is streets, not buildings, that form the primary fabric of urban life. This means that if we want people to walk and cycle, we need to prioritize the quality of the streets by designing them as inviting social places. Perceptual stimulation, large trees, places to sit, and pockets of activity: streets should attract as many people as possible, becoming places of public interaction. Movement on streets (mobility) then becomes more of an incidental by-product of people going about their daily activities, rather than the focus of street design. And if people are close to the destinations they need, then these interactive streets will be efficient for walking, cycling, and other types of transportation too.

The 1-Minute City model also encourages designers to create buildings with 'soft' edges - inviting and adaptable spaces that act as extensions of the retail, office, and residential spaces. In a 1-Minute City, the primary role of buildings is to reinforce and enhance the life-filled spaces around them.

An Expanded Living Environment

It is through this public-private relationship where the fundamental core of 'livability' lies. If we can consider our neighbourhoods and streets as spaces that become extensions of our homes, the total size and contents of our homes become much less important. The over-arching goal is that our living space expands beyond the boundaries of our private realm to increase our quality of life while making us more spatially efficient at the same time: the city becomes a fractal city (Salingaros, 2003) based on the concept of 'home'.

Due to their scale of impact, dense and livable cities must be at the core of our approach for collaborative home strategies. But it is also true that not everyone on Earth will live in cities. Nevertheless it is important to note that the concept of 'expanded living' through proximity can be applied to any living situation. As long as space is collaboratively shared with the goal of increased quality of life there is sure to be a benefit.

Notes

1 The 1-Minute City (Hill, 2020) is not literally bound by 60 seconds, but loosely describes the most immediate neighborhood, defined by regular and direct participation, by shared and intimate responsibility. It is simply the urban space outside your front door, the street your block sits on—but more importantly, the relationships you have with that environment, and in that environment (Hill. 2022).

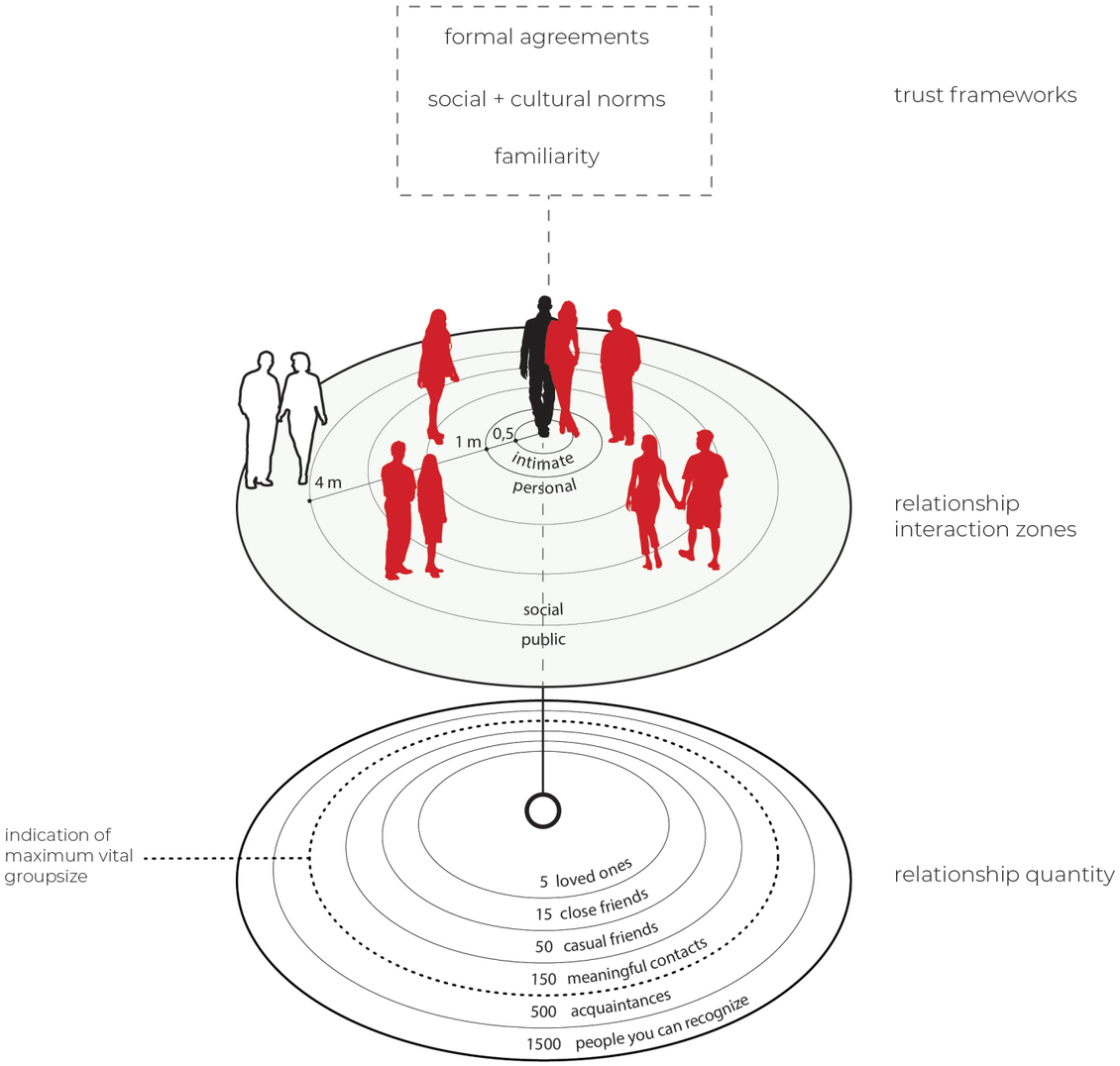


figure 9 trust

"...the ultimate, hidden truth of the world is that it is something that we make, and could just as easily make differently."

— David Graeber

4

Trust Enables Interaction

Collaborative Organizational Strategies

Once people have been brought together in close proximity, a strong sense of trust is needed to establish collaborative living.

In his famous work on social groups of primates, evolutionary psychologist Robin Dunbar proposed that historical groups of humans formed cohesive 'residential groups' of approximately 150 people. These groups consisted of family, friends, and familiar relationships based on day-to-day experience. Known widely as 'Dunbar's Number, this 150 person group is seen as the limit of strong ties of trust between people (see Figure 9).

In their book, 'The Dawn of Everything', anthropologist David Graeber and archaeologist David Wengrow discuss the implications of this group size with respect to the functioning of large-scale groups: in cities. They point out that relationships between fellow city inhabitants exist largely in a conceptual realm: although the people physically exist in close proximity to each other, you will likely never meet and get to know the vast majority of people around you (Graeber, 2021). Therefore, we need 'mental' models of behaviour in order to create the trust necessary for co-ordination, co-operation, and collaboration with people that we don't personally know.

Expanded Relationships

In a typical society, these 'mental' models of behaviour models can be based on cultural identity with their expected social norms – we generally rely on typical behavioural traits such as 'common decency' and 'manners' when interacting with strangers. But in the case of collaborative forms of living, the stakes are higher. We need a method that is 'socially sustainable', one that allows us to develop a high degree of trust with as many people as possible (Soenen, 2019). This way we can help encourage the mental ideas and ideals that people associate with home as mentioned in Chapter 1.

So what are the characteristics of these 'mental' models of behaviour that will allow us to develop a strong sense of trust between collaborative residents?

Structured Interaction

It begins with setting formal boundaries. If we were simply living with friends and close family, handshake agreements would work just fine. But in collaborative housing, we require agreements in the form of legal and financial ownership models that set out the expectations of behaviour and exchange. Figure 9 outlines typical examples of these models.

In relation to collaborative housing, these ownership models ideally have specific features that allow them to address issues of inclusion and diversity - primarily by encouraging affordability - and issues of trust by allowing the residents to participate in creating the models together at the outset of the project (Ostrom,): they are bottom-up. This is the basis of the 'commoning' approach discussed in Chapter 0.2. These participative models are particularly important because they involve a sense of control or 'choice'

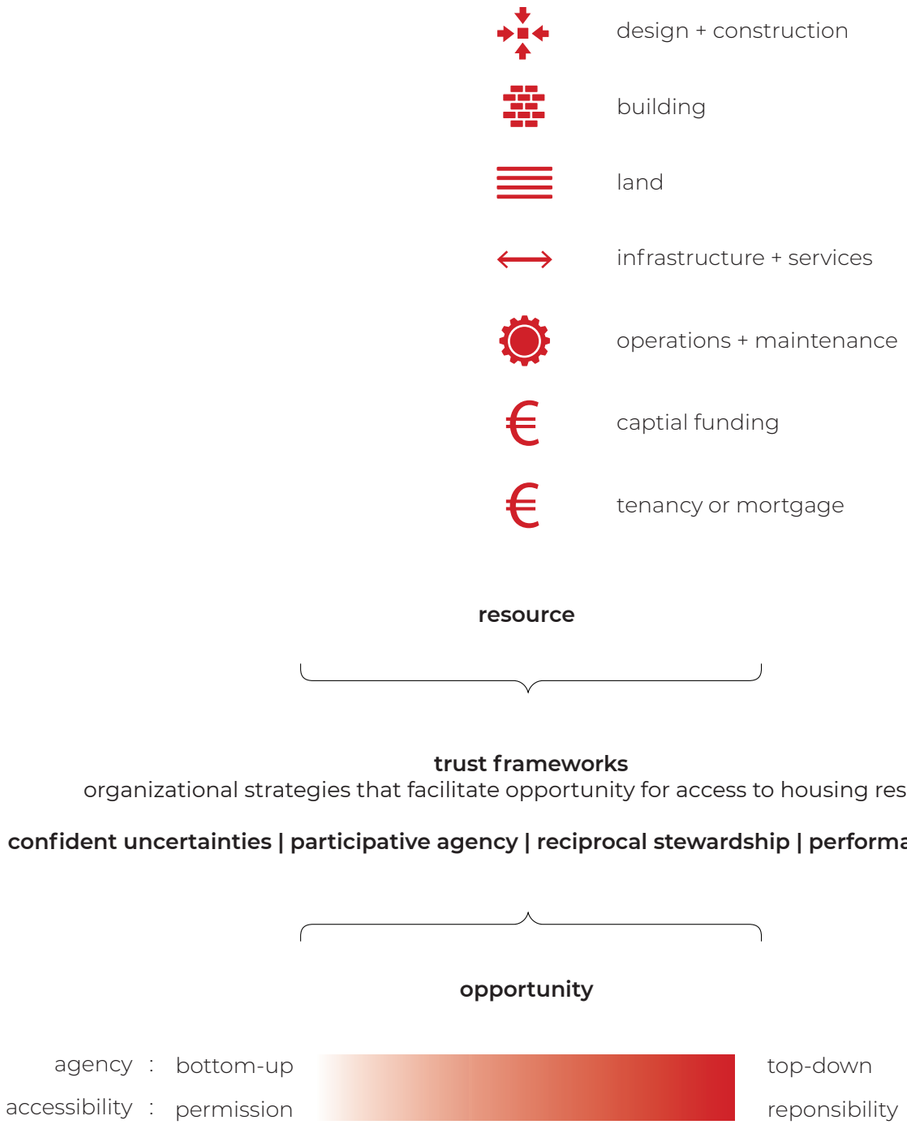


figure 10

by the residents, encouraging a sense of ownership and agency (Klundert, 2016). They also encourage the development of stronger relationships with other residents by requiring consensus – the residents determine together how they will live in a collaborative way.

But as appealing as these bottom-up participative may seem, it's important to remind ourselves that the environmental and social problems we face are systemic, and that bottom-up approaches may not be enough. For this reason, top-down governmental approaches are relevant as well – the good of society as a whole needs to be protected (Pelger et al, 2017).

This report proposes that we take these typical models one step further by going beyond legal and financial matters back into the realm of behavioural patterns that encourage trust at all levels. What follows is a set of approaches or 'trust frameworks' of interaction (Figure 10). Based primarily on the research by international thinktank Dark Matter Labs (Chang, Johar, 2022, Ronnquist, Johar, Martin, 2021), these frameworks propose ways to bridge the gap between large-scale systemic issues and the concerns of collaborative living forms by managing accessibility. As a society, we should make it our goal for everyone to be satisfied with the comfort, cost and lifestyle that their housing provides them.

Trust Frameworks

A. Confident Uncertainties

If designed correctly, collaborative living models can address a whole range of issues – from ecological to social. Inherent in this is the idea of multiplicity - a diversity of solutions. In our rapidly changing and unpredictable world, this diversity has power. It allows us to move away from singular truths and encourage a wide range of solutions: confidently embracing the idea of uncertainty.

Using the scientific method as a model we can consider collaborative dwelling types to be adaptable experiments. Instead of waiting for the 'right answer', we can then work together to co-produce new hypotheses, prototyping and verifying their viability by their performance and impact. This dynamic methodology will create a network of possibilities that are ready to meet a diverse range of challenges for a diverse set of occupants. This is our best chance of moving quickly and of scaling successful ideas at the pace that is necessary to address our current and future problems. (Freakonomics, Steffen, 2021).

B. Participative Agency

We must move past the top-down versus bottom-up dichotomy; we need to create a society that has stake in us, and we in society - a broad 'social contract' of trust. This starts with fairness and equality – a pact that shows that we truly believe that Housing is a Human Right (Parvin, 2016).

We can create radically collaborative governance systems that support opportunities for all citizens to propose, finance and develop their own places to live; allowing genuine participation, horizontal collaboration, and authentic civic pride. This type of governance system would guide us towards the greatest collective benefit, not just for ourselves but also for future generations and non-human life.

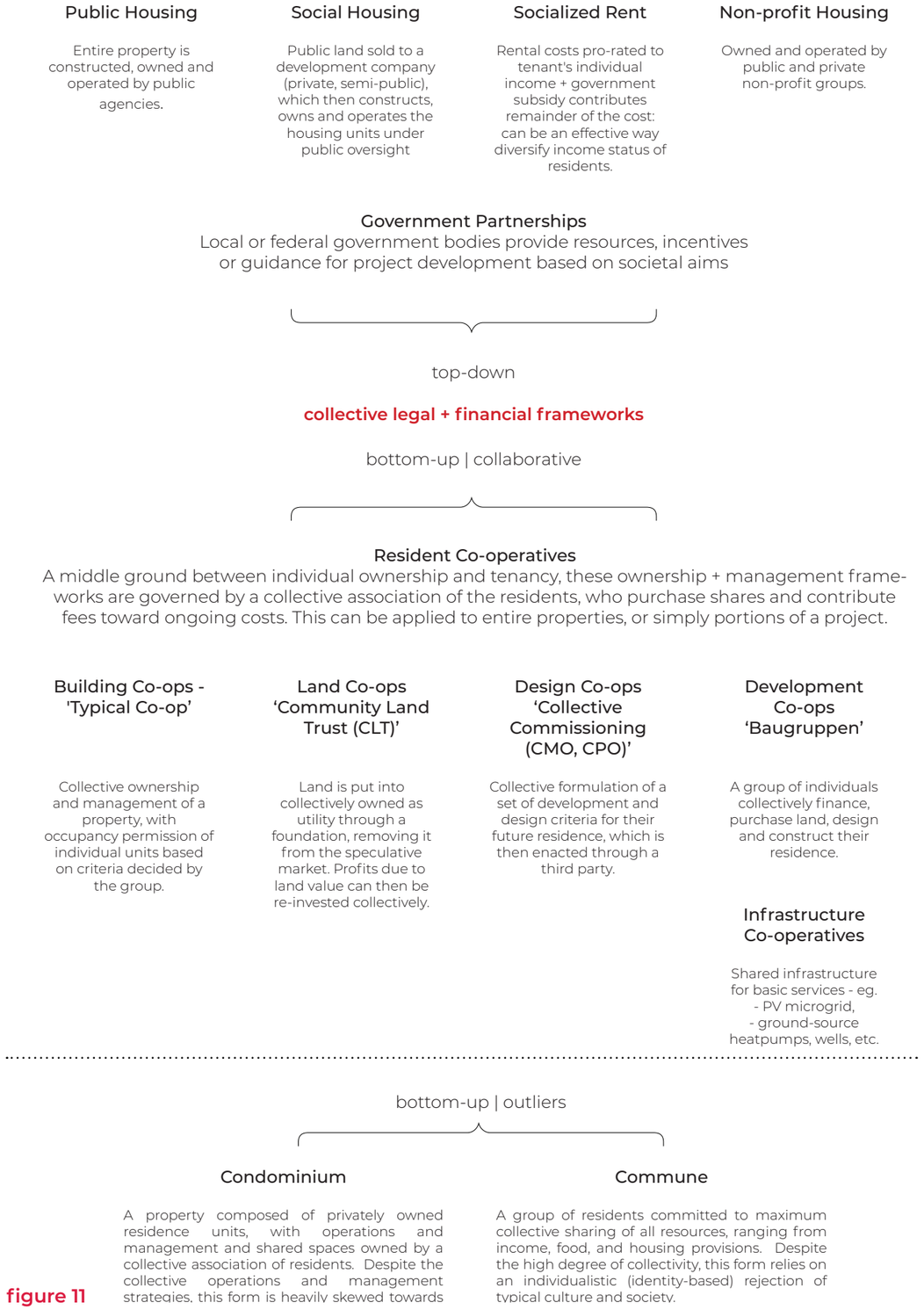


figure 11

C. Reciprocal Stewardship

In traditional capitalist societal structures, owning a home is considered a right of passage, a significant milestone in a person's life. Today, with housing embedded in global flows of financial capital, property is becoming more closely associated with class division and social inequity (Strauven, 2007). We can choose to fundamentally alter our sense of what it means to 'own' a house – we need strategies that prioritize accessibility and inclusivity. Having a certain percentage of 'affordable' housing should not be the goal: if only some housing is affordable, what is the rest? Dividing ourselves into 'haves' and 'have-nots' is not an effective societal strategy (Parvin, 2016).

A model that prioritizes stewardship rather than ownership is one option: temporal usage rights of housing, based on degree of responsibility / duty / obligation towards maintenance and improvement of a property: in short, stewardship. Stewardship recognizes the importance to interconnected reciprocal relationships, both societal and environmental. Upkeep and care of our world is essential for our own survival, and we need to be held accountable for the decisions we make. There's no better place to start than in our own backyard.

D. Performative Land Use

Space and its usage in the form of land use is central to the legal and financial models that govern opportunities for housing accessibility, and also our impact on the planet as a species. Access to land is also one of the largest drivers of housing affordability issues throughout the world. And when we say access to land, what we actually mean is access to 'location' – land with the proper permissions for dwelling construction and proper connectivity to make it worthwhile (Parvin, 2016). In the western world, most of the land that meets this 'location' criteria is owned by speculators.

Community Land Trusts (CLT) models are a good method to address this problem (Figure 11). By separating land costs and housing costs, and holding the land collectively, land-based profits can be re-invested in its own improvement (infrastructure, social programs, rent stabilization etc), thereby improving the quality of life for those that live on it. We can choose to develop this model further by linking all land value to actual 'production'. In this framework, land improvements would prioritize the creation of social infrastructure and civic outcomes, encouraging the development of common resources and use circular business models to retain wealth locally: performative land use.

This model faces challenges. Expropriation of privately owned land for this purpose would be politically impractical in the global west. One possible path is to leverage publicly owned land for this purpose. Cities such as Zurich, Vienna and Amsterdam already have top-down versions of this structure, leading to robust social housing initiatives and world-class public realm design. Pushing this further by encouraging Participative Agency in public land management, as well as modest reforms to exclusionary zoning (ie. allowing multiple forms and sizes of low-rise mixed use development) could allow communities to kick this model into overdrive and reap the benefits. Collaboration is key to the successful design and use of all space, including land.

Image 5
Brooklyn Grange Rooftop Farm
Queen's, New York
image: Bess Adler

> “At its fundamental level architecture does not deal in abstractions, but with life as it is lived, and its fundamental power is to identify place. ”
>
> — Simon Unwin

image 6: Brutopia, Brussels courtyard

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5

Designing the ‘In-Between’

Collaborative Spaces + Places

The previous sections discussed the context for collaboration. The location, proximity, and organizational frameworks that help us understand potential of a place. In this section we will discuss spatial design at the scale of architecture: a ‘home’. How do we actually design dwelling places that encourage people to share them while maintaining the feelings associated with ‘home’?

Collaborative spaces have the potential to shape the identity of a dwelling: they can become prominent features that define the unique characteristics and preferences of those who live there: physical spaces that adapt to life.

But by their very nature, collaborative spaces are polyvalent: they are unfixed and completely dependent on residents’ willingness to use them. This makes them difficult to define, let alone design (co-housing, room).

Faced with the same problem, architect Aldo van Eyck defined the issue this way:

“[I]ndividualism is an imaginary structure – this is why it fails. Collectivism is the final barrier man has thrown up against himself as a substitute. But there is only one reality between real persons – what [Martin] Buber calls ‘the real third’.... a real dialogue, a real embrace, a real duel between real people.... [this] ‘in-between’ is a place where different things can meet and unite...a place that ‘breathes in and out” (van Eyck).

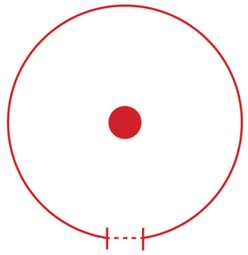
Taking this as our starting point, we can then consider how to design these ‘in-between’ places.

Since they are neither public nor private, but must meet the needs of both through a spatial ‘dialogue’ (Lammers, 2019, Pelger et al. 2017) – our first step is to consider them as a gradient of space. One way is to take advantage of a gradient’s changeable nature is through a ‘nudge’. Coined by behavioural economist Richard Thaler, ‘nudge’ refers to deliberate design choices that can influence, but not coerce, certain desired behaviours.

Translated into architecture, ‘to nudge’ means to create environmental / formal cues that visibly communicate how a person is to use a space – akin to a spatial body language that conveys opportunities to participate. All spaces do this in one way or another. There is no such thing as neutral spatial design, there is always a hint of the designer’s intent. The trick is to leave room for interpretation by the users; not to direct, but to facilitate – thereby encouraging spontaneity.

Since our intent is to create collaborative dwelling spaces, the opportunity we want to convey in our ‘in-between’ spaces is one that approaches the ideas of ‘home’ (Chapter 1). In collaborative living, the residents using shared spaces will be somewhere between friends and strangers (Wieërs, 2019), so creating a feeling of ‘control’ will be the first task: we need spaces with freedom that also convey a sense of security, collective responsibility, and collective ownership.

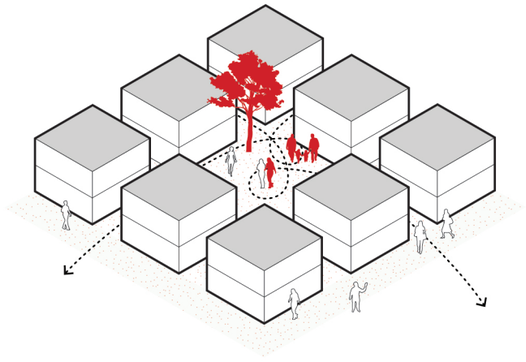
‘place’ archetype



· opportunity
· boundary
· threshold

‘place’ potential

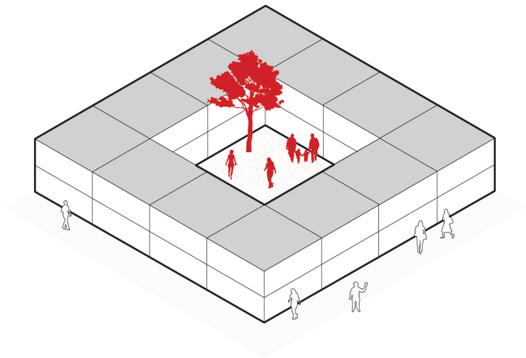
low



private space:
· complete units

collaborative space:
· weak opportunity
· weak boundary
· ambiguous threshold

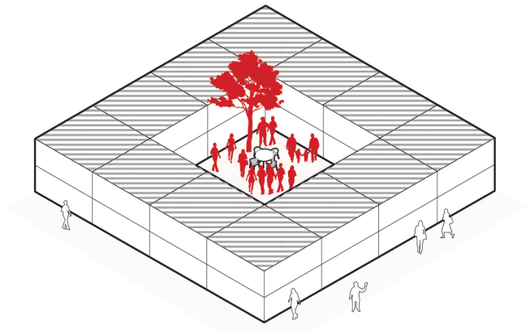
moderate



private space:
· complete units

collaborative space:
· weak opportunity
· strong boundary
· defined threshold

high



private space:
· partial / hybrid units

collaborative space:
· strong opportunity
· strong boundary
· defined threshold

figure 12

Boundary + Threshold

The most important factors in the idea of ‘control’ is the idea of accessibility: controlling who is allowed into a space – creating clear boundaries and thresholds. The typical city courtyard housing block depicted in Figure 12 is a useful example to illustrate these concepts. The block divides space into ‘theirs’ (street), ‘mine’ (interior), and ‘ours’ (courtyard) in a clear way. Through this simple form we induce an immediate social relationship (Wieërs, 2019).

With this clear set of boundary and threshold conditions, residents using the inner courtyard space can gain a sense of security, knowing that others using the space are either residents themselves, or have specific permission from other residents. This feeling of safety then encourages a feeling of ownership over the space.

Conversely, as seen in the ‘low’ placemaking portion of the diagram, allowing free access to the courtyard space would create the opposite effect. In a sense, if a space belongs to everyone, it also belongs to no one.

Center: Identity + Purpose

Once we’ve established a perimeter of ‘control’, we must then develop the ‘center’ of a space: its identity + opportunity. Space is valuable, so it must be purposeful - not left over. Interestingly, this also begins with the idea of boundary – through the ‘shape’ that a boundary creates and the ‘nudges’ that these shapes encourage. Humans gather in circles; spaces that accommodate circles naturally suggest the opportunity for socialization. The size of these circles also suggests the comfortable size of the group that they could contain (Chapter 4) – or, for that matter, what resources the space could contain.

This has a similarity to ‘commoning’, discussed earlier – the idea that space can give shape to resource opportunities. What is the potential we see? Production? Leisure? Movement? Can the space shape access to a microclimate (sunny + warm), a social activity (yoga class on Sunday), or a functional necessity (a kitchen)? The idea of social negotiation in the ‘in-between’ has an intimate dialogue – a partnership and dependence – with its ability to mediate common resources (Avermaete et al, 2022).

Like a Piranesian ruin, the possibilities ignited in a person’s imagination by the fragments of ‘opportunity’ inherent in a place’s unique resources are what creates collaborative places out of the ‘in-between’ space.

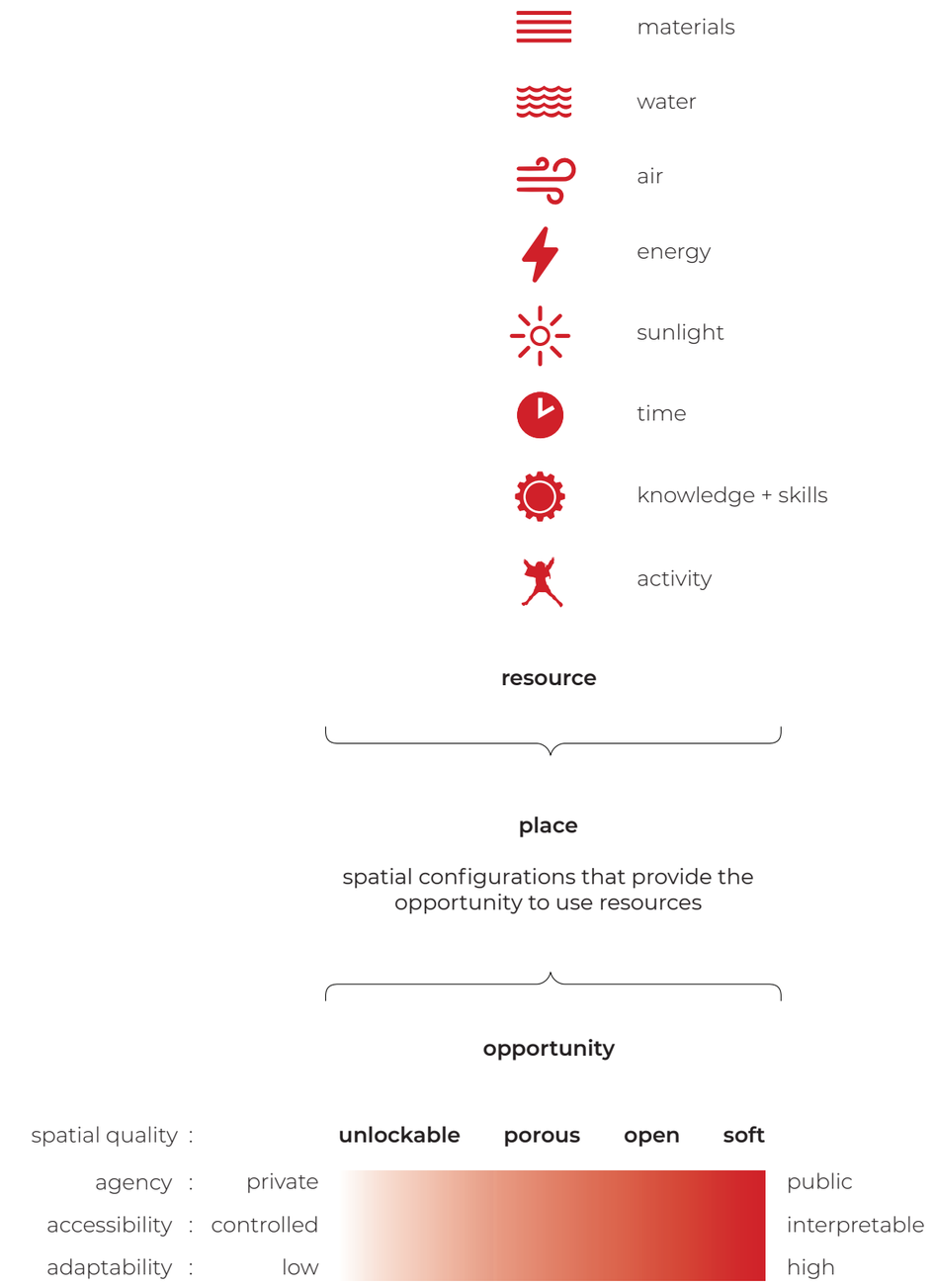


figure 13

Center: Necessity + Quantity

In addition to defining purpose and identity, activation of a place's 'center' also has to do with necessity, instigated primarily through private program (FIgure 13) (Bhatia, 2019).

If your private space contains all that you need day-to-day (a 'complete' dwelling), then collaborative spaces within your home's vicinity become optional; you may like the idea of using the sunny courtyard or sipping tea in the nearby shared living space, but you could just as easily use your own balcony or kitchen.

On the other hand, a 'partial' dwelling such as a studio room or a co-living arrangement will create a sense of necessity: collaborative space will be used simply because that space is seen as a useful addition to private space. In this case it is common practice to create a sense of 'partial' dwelling by allocating a certain percentage of shared space per 'partial' dwelling - netting the same overall area as 'complete' dwellings. This idea is similar to the idea of an expanded living environment from Chapter 3.

A Question of Qualities

Lastly, when creating places we have to reinforce the sense of 'possibility' through spatial quality. It's important to create a sense of 'invitation', hinting at the opportunities of adaptability, accessibility, and agency (Figure 13). This will help people understand that they can use a space; that they can make it their own and through their actions turn it into a collaborative place. The following list of four archetypal space qualities can be used to create this collaborative invitation through spatial opportunity:

- **unlockable spaces**
- **open spaces**
- **porous edges**
- **soft edges**

See Figure 14 for a full description of each.

Architecture's Role

In conclusion, the creation of collaborative places requires a sensitivity to the behavioural aspects of spatial design. The opportunities present in a space need to be highlighted by orchestrating a sense of place combined with qualities of invitation. Considering spatial design in this way, the role of architecture departs from the more typical creation of avant-garde forms and surreal atmospheres towards the act of creating fertile ground for interaction: cultivating resources and territories in a way that coaxes residents out of their private dwellings into an ecosystem of collaborative places: enriching their own lives and that of their fellow residents (Avermate, Schmidt-Colinet, Herold, 2022) (Pelger, Kaspar, Stollmann, 2017).

Through the systemic application of the outlined strategies (defining home, creating opportunity, using the potential of proximity, building trust and activating in-between spaces) at all scales of spatial design, we have the opportunity to design a more equitable, healthy, and sustainable future for us all.

Partial | Co-Living
living units arranged around a functionally-necessary shared resources space such as a shared kitchen or shared sanitary facilities. Lack of total area can also drive necessity.
eg. Room, Studio, Co-Living, Micro-Housing

Complete | Co-Housing
living units arranged around a value-added (option) shared resource space such as a shared outdoor space or a multi-purpose room
eg. Large Apartments, Town-houses, Single Family Homes

Hybrid
living units create the necessity of a shared resource by program shift during set periods of time, for instance a multi-purpose room becomes an office space
eg. Live-work arrangements, rooftop vegetable gardens

private dwelling configuration

‘place’ resources

Production Places
workshops, studios, offices, kitchens, community gardens, crop fields | **Fabrication**
restrooms, laundry, lockers, storage, services | **Support**
classrooms, libraries, lecture halls | **Learning + Knowledge**
theaters, studios, galleries | **Culture**
see ‘Leisure Spaces: Consumption’ below | **Distribution**
WKO (geothermal heat coupling) space, PV roofs, energy infrastructure | **Active Energy**
access to daylight, sunlight, access to earth, waterflow, airflow | **Passive Energy**

Leisure Places
terraces, balconies, loggias, courtyards, roof terraces | **Occupied Edges**
ornamental gardens, planters, central courtyards, entrance courtyards | **Biophilia**
gym, pool, courts, tracks, fields, courtyards (play spaces) | **Physical Activity**
courtyards, multi-purpose rooms, lounge, living, sitting | **Socializing**
games rooms, media rooms, art galleries, theaters | **Entertainment**
spa, salon, bathroom | **Grooming**
retail, dining, event rooms, multi-purpose rooms, courtyards | **Consumption**
bedroom, day bed, couch | **Sleeping**

Movement Places
entrances, lobbies, alleys | **Access**
paths, corridors, halls, galleries | **Horizontal**
stairs, atria, elevators | **Vertical**

figure 14

Edge Spaces

spatial opportunity

Defined Spaces

Porous
Highly visible spaces of selective accessibility + connectivity, designed to stimulate chance encounters and allow for interactions between residents.

eg. Spacious, attractive and well-positioned stairs can be an effective nudge towards physical activity and social encounters.

Soft
An abiguous, “thickened” edge that ‘folds’ to accept life and activities through collections of small spaces. Soft spaces almost always contain places for people to sit, often occupied in the short term during chance opportunities. These edges invite a high variety of interpretations. Commonly associated with spaces of movement (porous edges) or at the border of larger activity spaces, soft edges form effective thresholds, creating gradients between different space types.

eg. benches and gardens at the edges of paths through a courtyard, balconies and bay windows at the edge of private spaces, cafe seating at the edge of a street

Unlockable
Similar to typical ‘program spaces’, these are resource-rich but highly controlled spaces - access is granted only at certain times based on rules of permission. This control heightens the sense of uniqueness and value of the resources contained with the space.

eg. spaces with unique scale characteristics (meeting spaces, event spaces), spaces with value-added equipment (audio-visual, communications, art, tools,), semi-private dwelling spaces (your friend’s balcony)

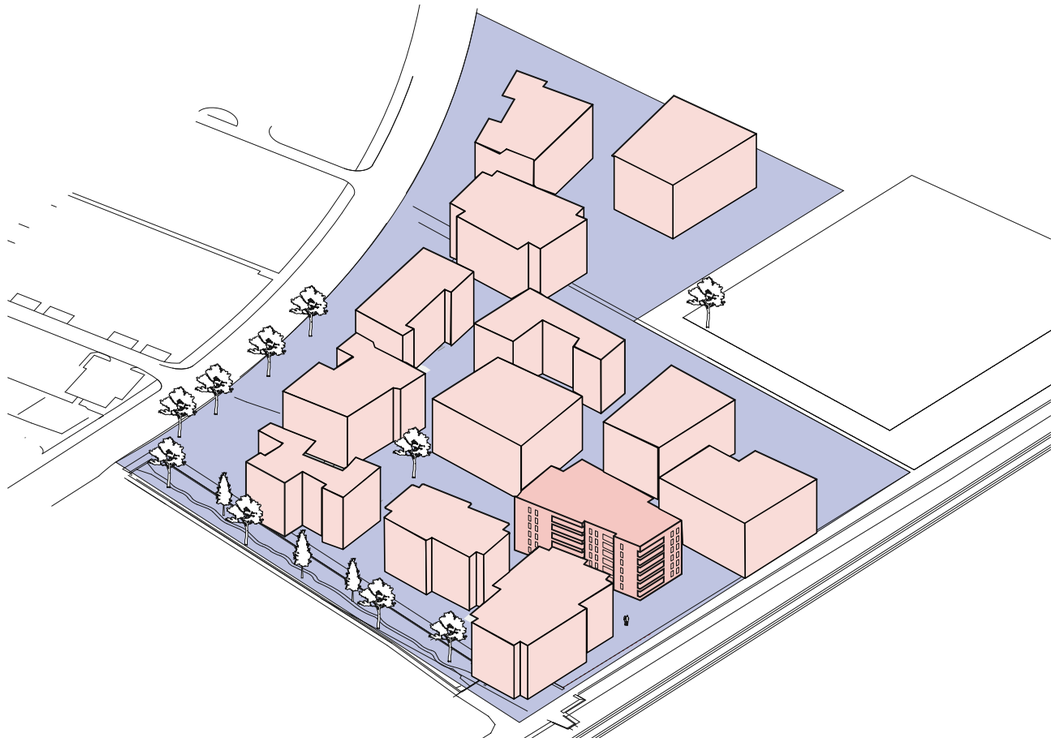
Open
A highly adaptable space that through participatory engagement can be reconfigured. Dependent on agreed-upon rules (permission based on responsibilities of cleaning and maintaining) and available elements or infrastructure, such spaces are in a state of ‘continual becoming’ based on its inherent resources. Often presented as ‘raw’ unfinished space to encourage an immediate sense of ownership (ie. not finished, not ‘precious’)

eg. multi-purpose room with moveable partitions and furniture suitable for events, oversized structural building frames that allow residents to configure their own living space, a raw industrial space that allows resident artists to set up temporary studio spaces

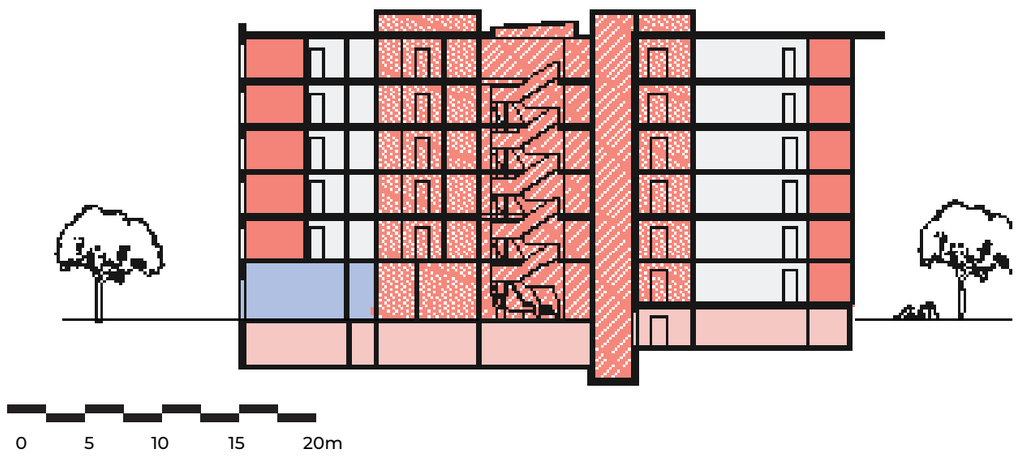
Mehr als Wohnen, Zurich

Location:	Zurich, Switzerland
Year:	2007-2015
Owner:	Mehr als Wohnen housing association
Architect:	Duplex Architects
Total site area:	40.200 m²
Total floor area Haus A:	6.883 m², housing area: 3.937 m²
Dwellings:	395 private units in 11 cluster flats
Instigation framework:	Typical co-op
Operational framework:	co-management, rent from the association
Demographics:	Mixed
Shared functions:	Bathroom, kitchen, living room, outdoor space, laundry room, bicycle storage

image 7: Mehr als Wohnen, Zurich: plaza



1. Restaurant
2. Workshop/Workspace
3. Bakery
4. School
5. Store
6. Bike store
7. Guest house
8. Hybrid co-living



Hunziker Areal is a 13-building village consisting of 395 dwellings, shops, restaurants, studios, day-care centers, guesthouses and workshops. It offers around 150 jobs and housing for 1200 people with very different housing requirements and backgrounds.

Mehr als wohnen is the initiator of the site, a citizen driven housing association. The members of the association developed the project with the intention of settling there themselves. The association collaborated with four architecture firms to design the whole area and buildings.

We take a closer look at one of the 13 building: Haus A, a 'cluster house' designed by Duplex Architecten. On every floor, the residents live in series of 8 compact private units which are arranged within a spacious common room. The private units contain two bedrooms, a bathroom and a kitchenette.

Every private unit doesn't require the full provision of infrastructure, circulation spaces. Therefore, space can be saved for more lounge areas and other communal spaces. The most remarkable about this project are the different levels of community that are embedded in the buildings and site. Residents dispose over their own intimate space, but are able to make use of a larger space that you share with your cluster. On a building level, they share a "vertical street" and other common facilities where you can encounter other residents of the building. On a site level, the residents are all part of the association, frequently organize activities for the whole neighborhood and remain closely involved in the decision making about the development of the site through workshops, assemblies and other participatory activities. With the different activities on the ground floors of the buildings, the site has soft edges and invites outsiders to make use of the public spaces as well.

co-living and co-housing

unlockable space

place of fabrication

image 8: Mehr als Wohnen, Zurich: shared kitchen

Ground level

1. Workshop/Work space
2. Laundry room
3. Bicycle storage
4. Shared storage
5. Shared kitchen
6. Shared living room
7. Outdoor space
8. Private unit

First floor

1. Workshop/Work space
2. Laundry room
3. Bicycle storage
4. Shared storage
5. Shared kitchen
6. Shared living room
7. Outdoor space
8. Private unit

co-living

unlockable space

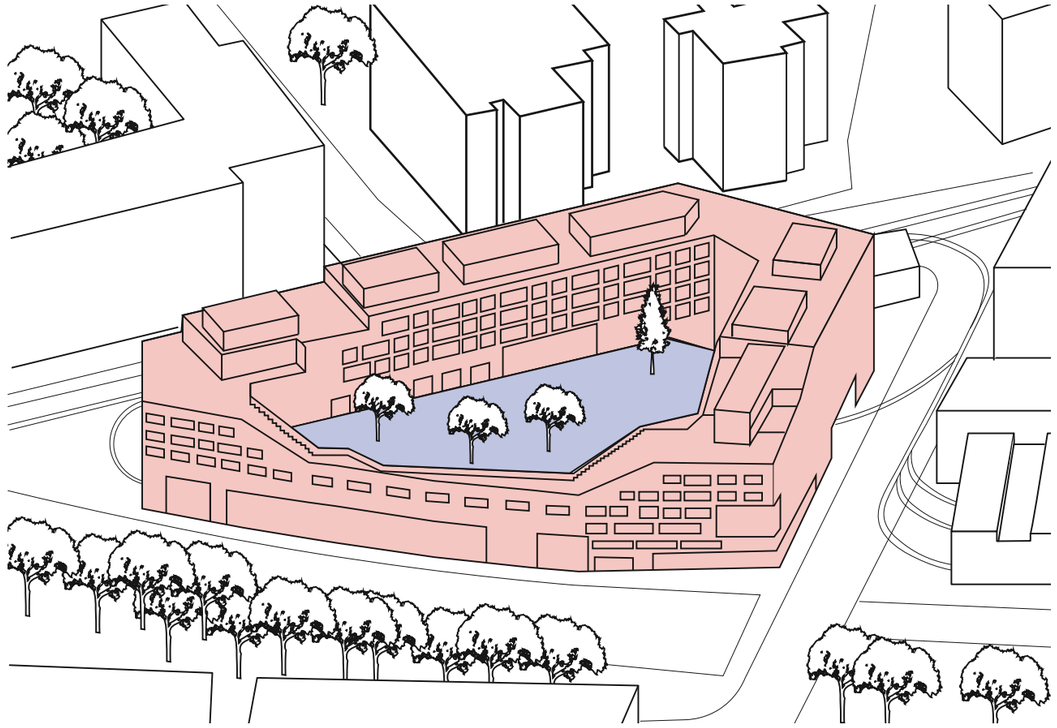
place of fabrication

image 9: Mehr als Wohnen, Zurich: shared outdoor space

Kalkbreite, Zurich

Location:	Zurich, Zwisterland
Year:	2014
Owner:	Kalkbreite Cooperative
Architect:	Mueller Sigrist Architekten
Total floor area:	22.900 m²
Dwellings:	88 units, 256 residents
Instigation framework:	Public housing
Operational framework:	rent
Demographics:	Mixed
Shared:	Bathroom, kitchen, living room, outdoor space, laundry room, bicycle storage, playground

image 10: Kalkbreite, Zurich: courtyard

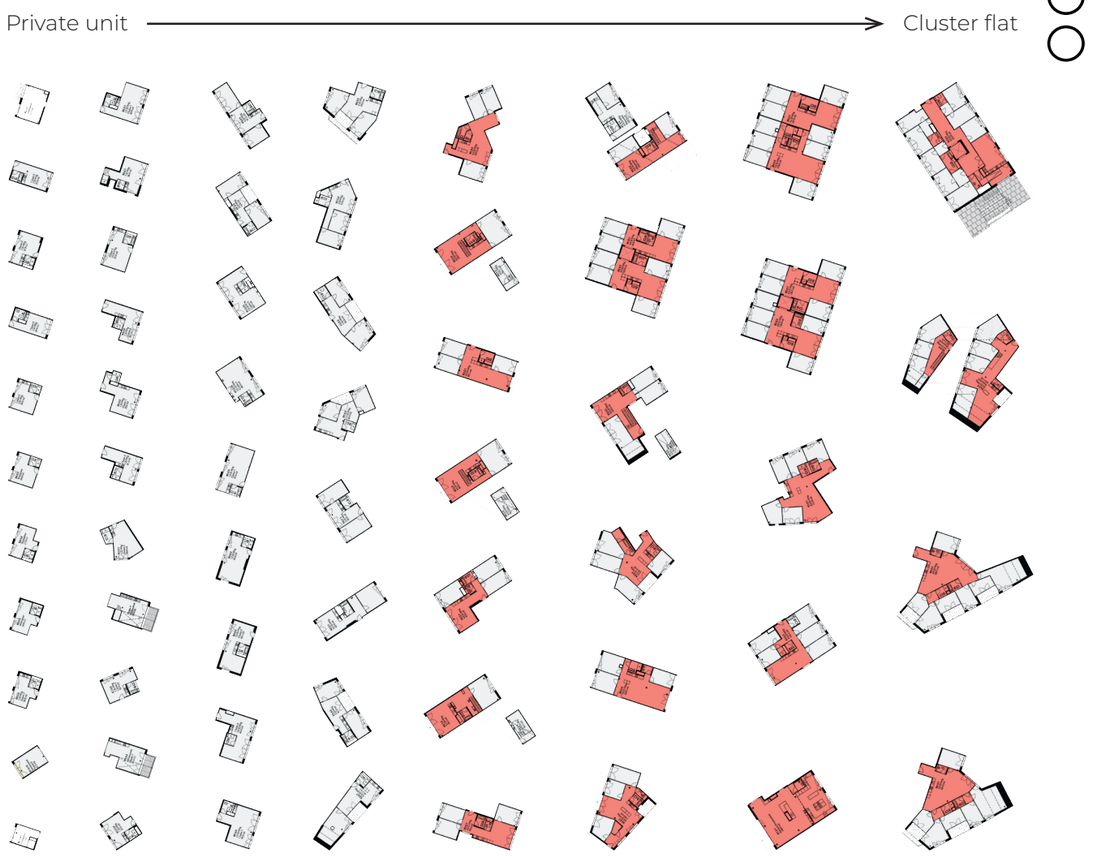


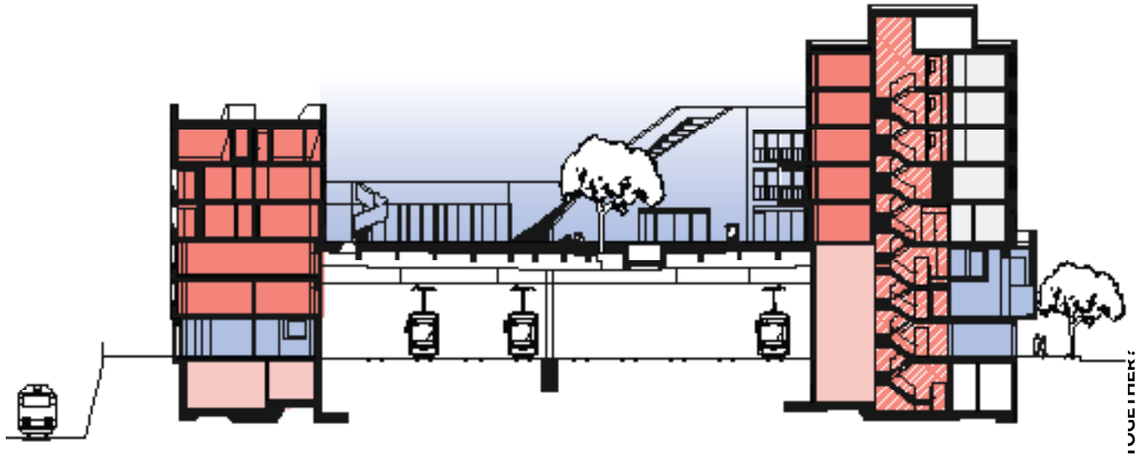
The plan was Initiated by a Kalkbreite coop, this is not a coop formed by the future residents, but is a public housing cooperative striving for economic, ethnic and cultural diversity. The land on which it is built on belongs to the municipality of Zurich and rents out the land to the coop for 75 years; this is a common economic framework in Zurich, which prevents the ground to become a speculative holding and keeps the prices of rent low.

The building contains a diversity of spaces, from autonomous apartments, cluster homes and co-living apartments.

The residents have the possibility of using unlockable spaces, rent a bigger apartment called a joker-room, or make use of the gigantic underground bike storage.

The variety and connection of spaces is unique to this project: there are shops, restaurants, bars and cinema in the plinth of the building on both the street sides. It is built on top of the tram depot, in other words, it is well embedded in its environment, a porous building with a soft edge. The central public courtyard is a safe space for kids to play, where other residents from the neighborhood come as well.





co-living + co-housing

soft + porous space

place of nature + light + consumption

image 1: Kalkbreite, Zurich: street

First floor

1. Store
2. Semi-public courtyard
3. Joker rooms
4. Cluster housing
5. Shared kitchen
6. Shared living room

0 5 10 15 20 25m

Second floor

1. Store
2. Semi-public courtyard
3. Joker rooms
4. Cluster housing
5. Shared kitchen
6. Shared living room

co-housing

soft + porous

movement + biophilia + light

Brutopia, Brussels

Year:	2007-2015
Owner:	Brutopia housing association
Architect:	Stekke + Fraas architects
Total floor area :	5.900 m²
Dwellings:	29 appartments : 27 are ‘passive housing , 2 ‘very-low energy’ housing
Instigation framework:	Design co-op
Operational framework:	Co-management, rent
Demographics:	Mixed
Shared functions:	Courtyard, boardwalk, rooftop, multifunctional room, laundry room

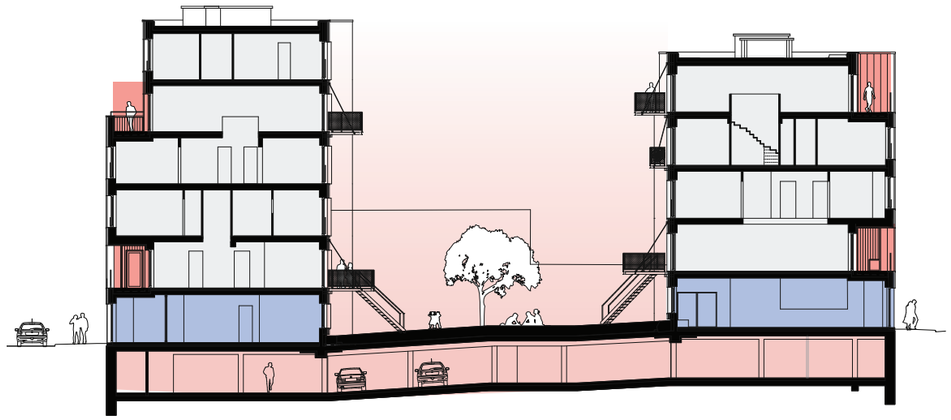
image 12: Brutopia, Brussels: courtyard

A group of residents of Brussels teamed up and worked together to build Brutopia, a large-scale cohousing project. Their focus was set on durability, prosperity, ecology and social diversity. On top of that they had a view towards affordability and quality of housing in Brussels.

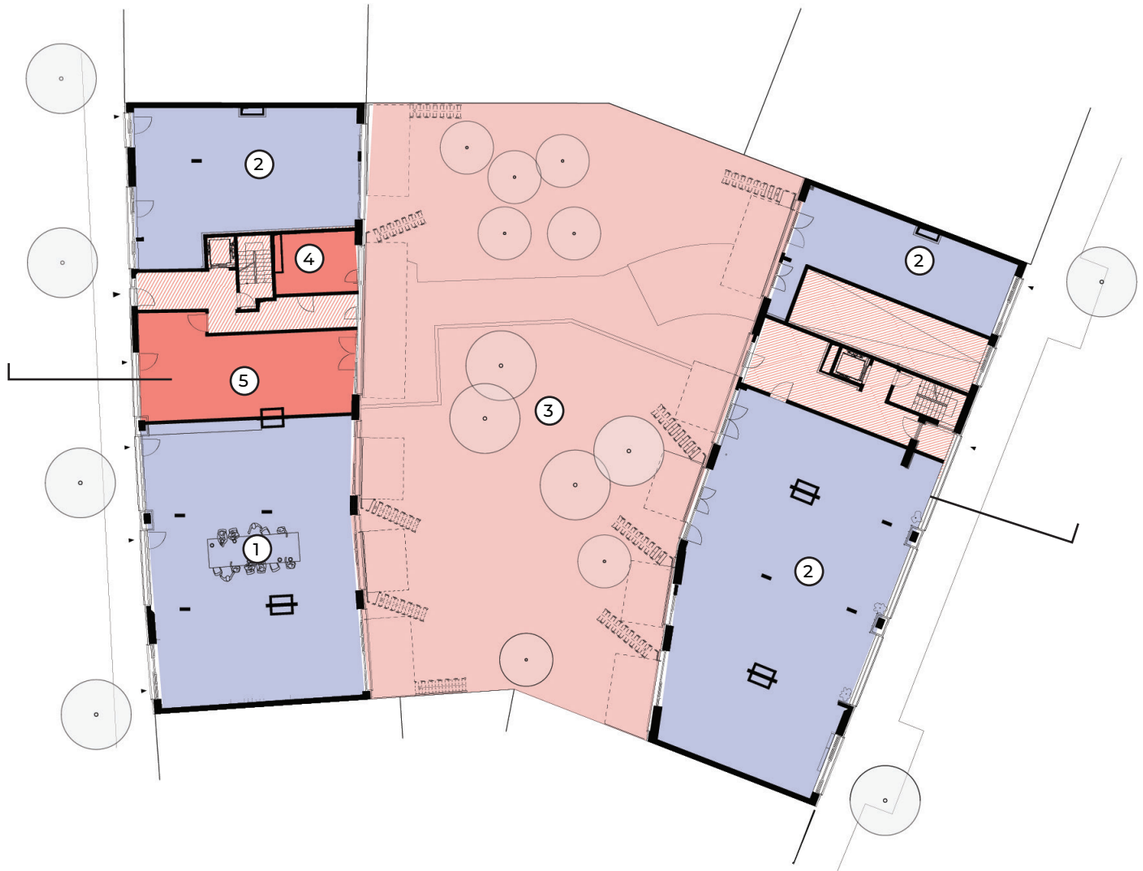
The inhabitants of Brutopia joined together to endorse the tasks of a ‘classical’ developer. They appointed Stekke+Fraas as their architect and completed the Brutopia project without the intervention of a developer. This collaboration made it, for most of the participants, possible to continue living in the capital city. The different apartments have variable surfaces and an adapted economical value, so that a diverse group of people could move in the project. The apartments were delivered as empty shells which made it possible for everyone to establish their apartment according to their capabilities. This idea made it again possible to broaden the group of inhabitants.

Residents can walk from one building to another through the garden, from the car park to their apartment, or conversely to the shared laundry area or living room. The garden is where residents often meet, or where they gather on summer evenings for an aperitif and barbecue. Besides this, a large-scale bicycle-parking has been created and the inhabitants have set up a car sharing system.

Another asset of the project are the galleries. The outside galleries that are linking the apartments are big enough to become flexible living spaces, for furniture and recreational spaces.



Private
Collaborative for cluster
In-between space for cluster
in-between space for cluster
Collaborative for whole building block
Public



Ground level

1. Workshop/Work space
2. Community center
3. Shared courtyard
4. Laundry room
5. Multipurpose room
6. Boardwalk

0 5 10 15 20 25m

First floor

1. Workshop/Work space
2. Community center
3. Shared courtyard
4. Laundry room
5. Multipurpose room
6. Boardwalk

co-housing

soft + porous

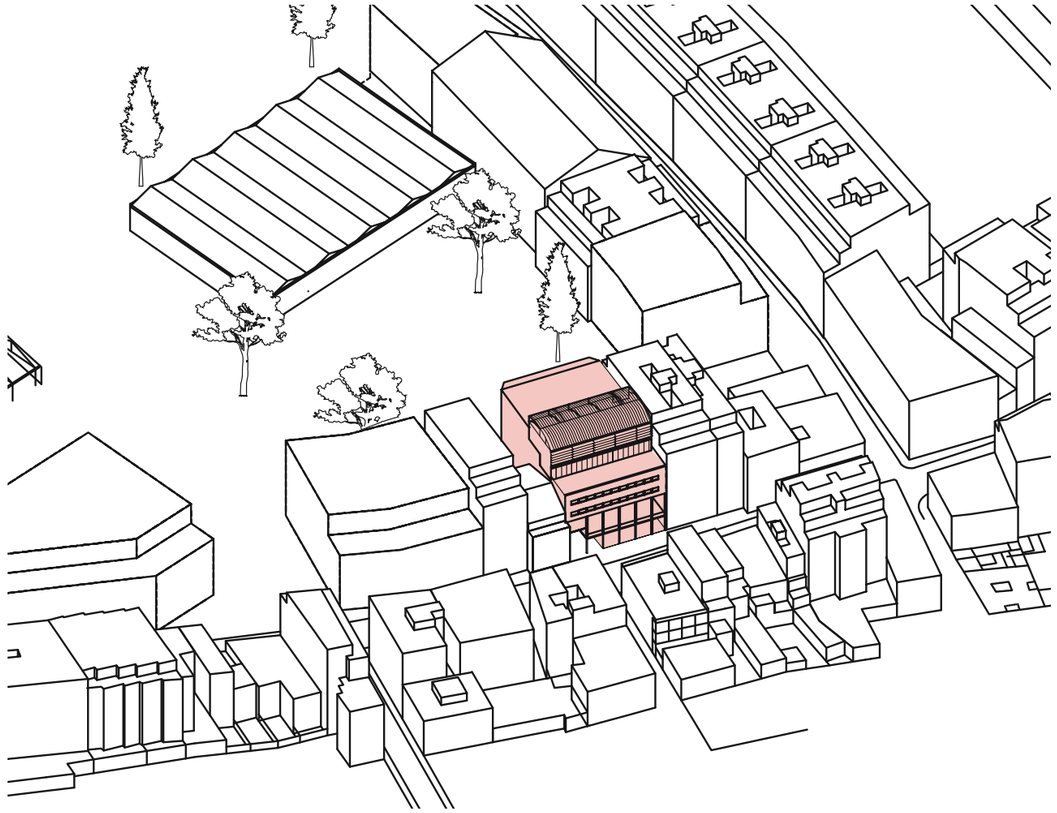
movement + biophilia + light

image 13: Brutopia, Brussels: boardwalk

La Borda, Barcelona

Location:	Barcelona
Year:	2018
Owner:	La Borda cooperative
Architect:	Lacol architects
Total floor :	3.000 m²
Dwellings:	28 apartments (40, 60 and 75 m²)
Instigation framework:	75-year lease, Land co-op, design co-op
Operational framework:	Social housing, rent
Demographics:	Mixed
Shared functions:	Shared kitchen and dining room, outer terrace, multifunctional room, laundry

image 14: La Borda, Barcelona, façade

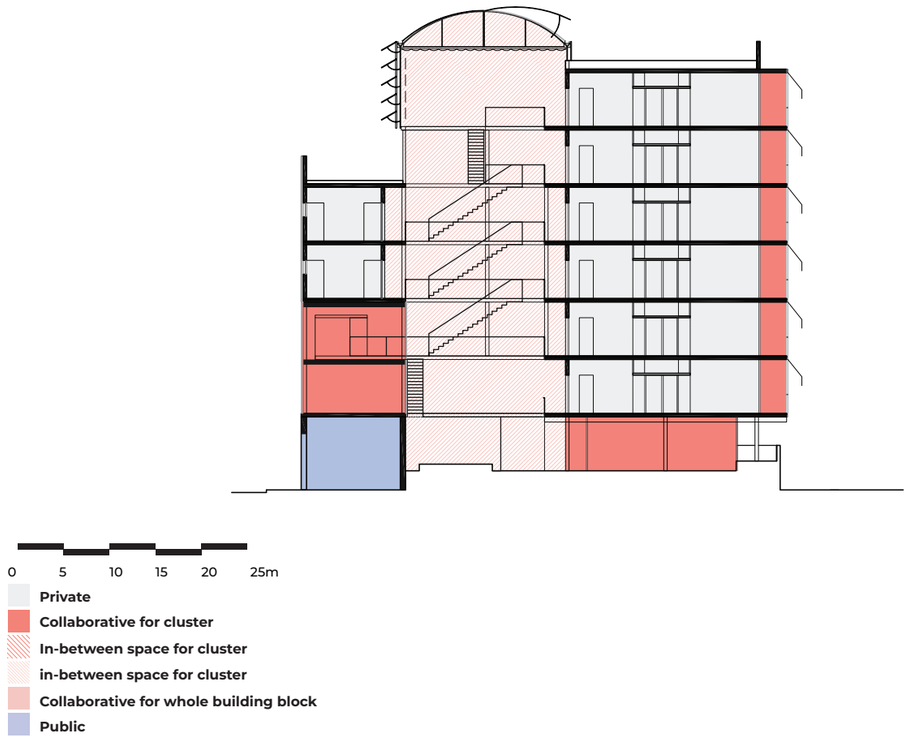


La Borda is a housing cooperative self-organized by its users. The core mission of La Borda is to guarantee access to decent and affordable housing for its members and to become an alternative model for people with low incomes. This means that in order to be part of the cooperative the income of the habitants may not exceed a certain amount. All decisions, from the design to the management of the building, are collectively taken in general assemblies. This stimulates sense of ownership/control. The collective decided to leave the common rooms unfinished and programmatically flexible, which allows the spaces to be completed, adapted and transformed by the residents.

During the participatory design phase, the residents formulated two main design goals: first, they redefined the collective housing program by proposing community spaces that allow strengthening social interaction and enhance community life. Second, the residents aimed to have a building with a low impact on the environment.

This resulted in maximized south-facing units for more sun exposure. The climate-controlled roof of the central atrium can open up in summer for more ventilation and close in winter to keep the warmth in. This central porous space of the building is pleasant to pass through and connects all the apartments. It is a playful space with different elevations and wide boardwalks, to encourage natural encounters.

The residents have access to a big open space in the middle of the building, where they have the room to organise gatherings, let the kids play together etc...



co-living + co-housing

open space

place of production + socialization

image 15: La Borda, Barcelona, atrium

Ground level

1. Public Alley
2. Store
3. Entrance & inner courtyard
4. Kitchen & Dining room
5. Technical room
6. Outer terrace

First floor

7. Multipurpose space
8. Storage
9. Laundry

co-living + co-housing

porous space

place of active energy

image 16: La Borda, Barcelona, roof PV-panels

co-living + co-housing

porous space

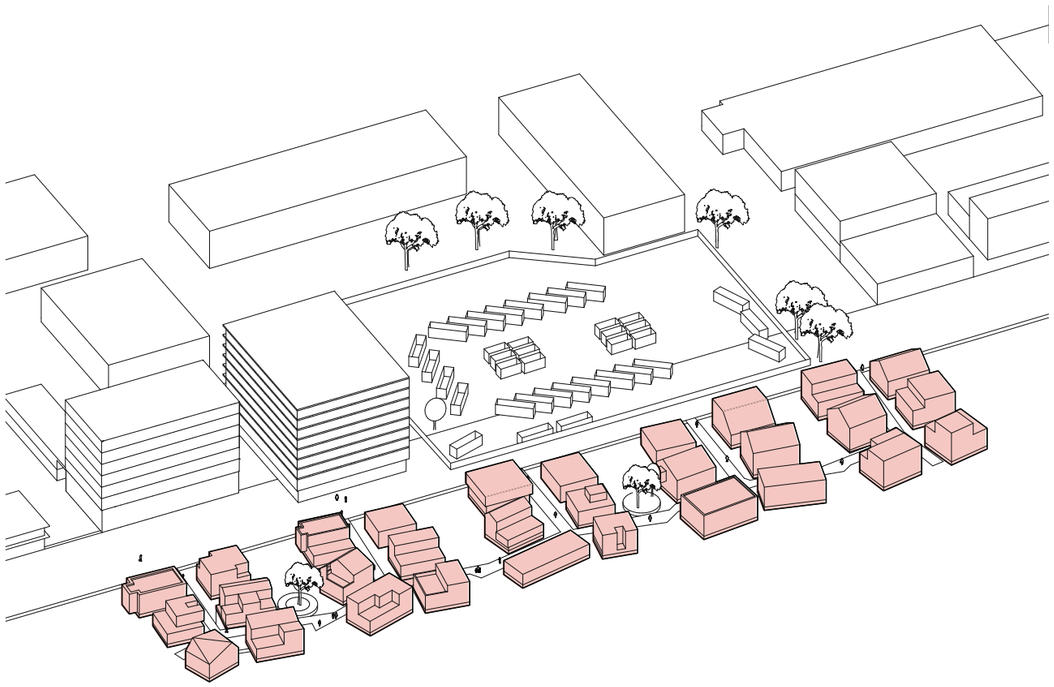
place of passive light + air

image 17: La Borda, Barcelona, rooftop

Schoonschip, Amsterdam

Location:	Amsterdam, Netherlands
Year:	2008-2021
Owner:	VvE Schoopschip
Architect:	Space&Matter (sight master plan)
Total site area:	8.500 m²; jetty 600 m² communal house 212 m²
Dwellings:	30 houseboats, 48 households, 120-160 residents
Instigation framework:	Collective commissioning
Operational framework:	Private ownership, infrastructure co-op
Demographics:	Families
Shared fucntions:	Energy systems

image 18: Schoonschip, Amsterdam



This circular neighbourhood located in the north of Amsterdam was initiated and developed by a group of enthusiastic residents that shared a similar dream: to build a sustainable community on the water. The urban plan for the Schoonschip site masterplan was designed by architecture firm space&matter.

Schoonschip is show-cased in this report because of the outstanding collective ecological plan and use of resources. The residents mainly share resources and outside space in between the houses instead of physical spaces.
Each floating villa plugs into a central jetty which contains the technical infrastructure, creating a smart network of dwellings. This smart grid makes it possible to trade energy efficiently amongst the households.

The roofs of two-story houses contain green roofs for water collection, greenhouses, food production areas or lounge areas for the owners of the building. The roofs of the 3 story buildings are equipped with solar-panels.
A wider jetty in the middle of the site is also used as a multi-purpose, functional space.

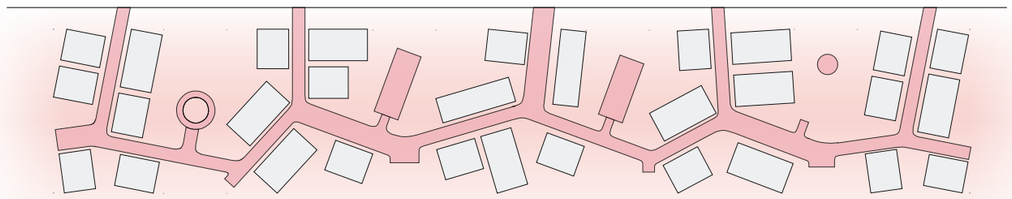
Contained inside the jetty will be a wastewater treatment and nutrient recovery system in which raw materials and energy van be recovered from waste water. Surrounding the jetty are floating helophyte filters that use plants to clean the last remnants of nutrients before clean water is discharged into the surrounding area.

Beside the technical infrastructure, the jetty also functions as social platform where the residents meet; All the houses are exclusively accessible by the jetty (or by boat off course). Besides the porosity of the site regarding light, air and water, the jetty is a porous space because it is easily accessible and connects all the houses to one-another.

Resources

1 source
2 source
3 source

image 19: Schoonschip, Amsterdam, boardwalk



Shared infrastucture
'social + passive energy + active energy'

co-living / co-working hybrid

unlockable space

place of culture and entertainment

image 20: Schoonschip, Amsterdam, boardwalk

Green roof + solar infrastructure

Greenhouses

Green roof terraces

Solar heat collectors

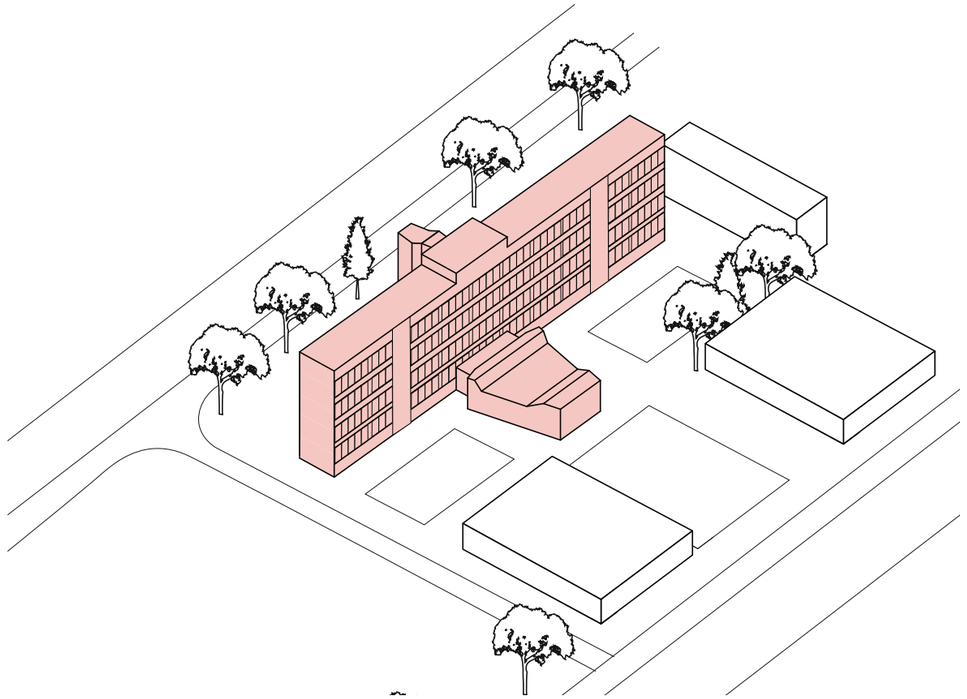
Solar PV cells

DOORARCHITECTEN.NL

Broedplaats Lely, Amsterdam

Location:	Amsterdam, Netherlands
Year:	2007-2015
Owner:	Urban Resort
Architect:	Original building was designed by Ben Ingwersen
Dwellings:	47 living spaces and 30 workplaces
Instigation framework:	
Operational framework:	Rent
Demographics:	Singles, artitsts, statusholders

image 21: Broedplaats Lely, Amsterdam: façade



‘Broedplaats’ LELY is located in the former Calvijn College. The building is managed by Urban Resort. Urban Resort is an non-profit organisation that develops and manages ‘breeding grounds’ for artists, freelancers, starters and craftsmen in Amsterdam. They offer places where the rents remain low and the engagement is high.

Broedplaats LELY offers 47 living spaces and 30 workplaces. It is a place where artists can let their ideas flow and unfold. It also offers a place for international artists and refugees with a residence status to settle. Furthermore, it is a place where cultural programs are developed. Residents are selected by Urban Resort based on the willingness and motivation to have an societal impact. Next to attending the creative industry, there are restriction based on the income limit.

The living spaces are clustered in different groups. Each residential group includes seven to eight residents. They share a kitchen and a bathroom. The former hallways of the Calvijn College where xxx meters wide. To keep the evacuation route urban resort placed extra walls in the hallway. Each hallway is therefore split in to two: a circulation space and a shared storage zone. Here residents can exchange their equipment and share laundry machines. Each residents has their own private unit with a sink. The private unit is a former class room of the Calvijn College and is approximatly 50m2.

To add: the extra space in the corridors is a soft, porous and open space.

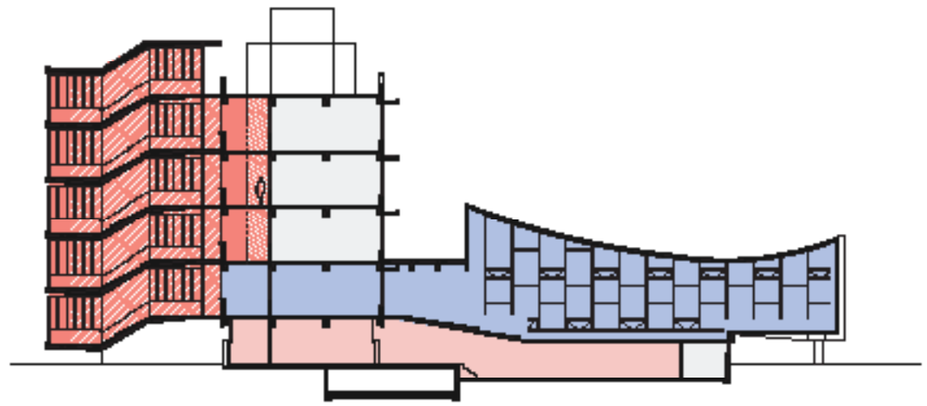
Next to approximately 50 residents, LELY also houses cultural organisations. The former aula of the Calvijn College offers space for lectures, exhibitions, performance and more. With tenants such as the Open Embassy and De Appel, LELY is a fundamental part of the city.

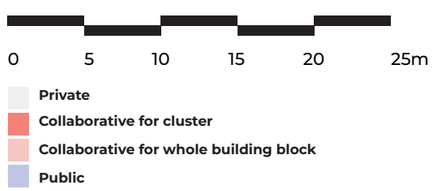
It offers a place where you can work and experiment freely on an artistic and social level.

Resources

1 source
2 source
3 source

image 22 Broedplaats Lely, Amsterdam: façade



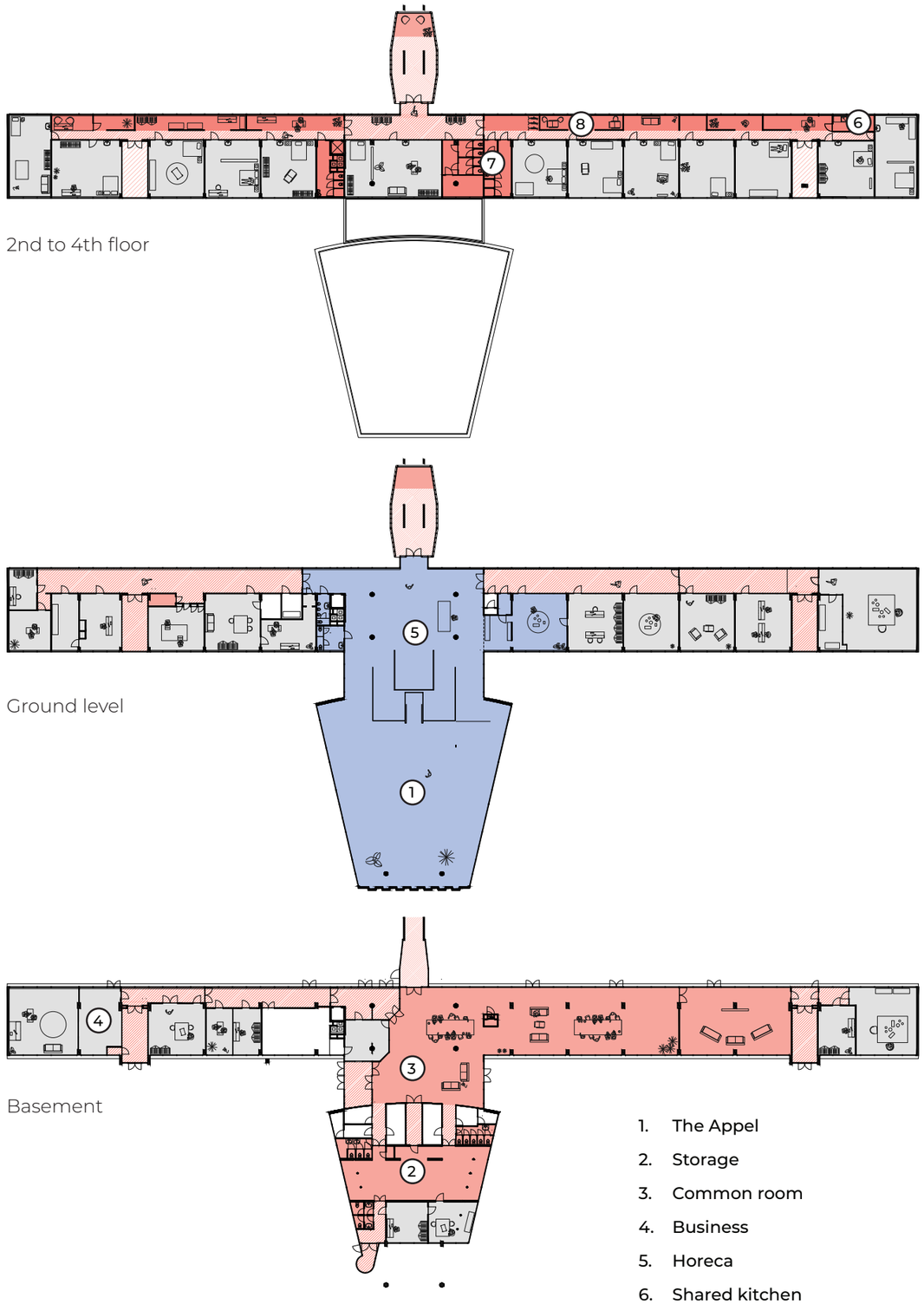


co-living / co-working hybrid

places of movement + expression

+ porous spaces

image 23 Broedplaats Lely, Amsterdam: hallway



1. The Appel
2. Storage
3. Common room
4. Business
5. Horeca
6. Shared kitchen
7. Shared bathroom
8. Multifunctional corridor

image 24 Broedplaats Lely, Amsterdam: kitchen

image 25 Broedplaats Lely, Amsterdam: hallway

image 26 Broedplaats Lely, Amsterdam: bathroom

co-living / co-working hybrid

+

unlockable space

place of culture and entertainment

image 27 Broedplaats Lely, Amsterdam: De Appel

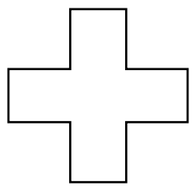
co-living + co-housing

+

open + unlockable space

place of fabrication + consumption

image 28: Spreefeld, Berlijn



co-housing

soft + unlockable space

place of nature + activity

image 29: Qville, Essen (BE): outdoor place

co-living and co-housing

place of fabrication

unlockable space

image 30: Spreefeld, Berlin: workshop

co-housing

unlockable space

place of activity

image 31: Qville, Essen (BE): swimmingpool

co-living / co-working hybrid

place of entertainment

+

open + unlockable space

image 32: WG terrein, Amsterdam

co-living / co-working hybrid

place of movement + leisure

porous + soft space

image 33: WG terrein, Amsterdam

co-living + co-housing

place of leisure + activity

unlockable space

image 34: Collectief Noord, Antwerpen

co-housing

place of food

unlockable space

image 35, Hof van Heden, Rotterdam

co-living

place of support

unlockable space

image 36, San Riemo, Munchen, laundry room

co-living / co-working hybrid

unlockable space

place of nature + light + socialization

image 37, Space S, Eindhoven, rooftop

co-living / co-working hybrid

open space

place of physical activity

image 38, WG terrein, Amsterdam

co-living + co-housing

place of socialization + nature

unlockable space

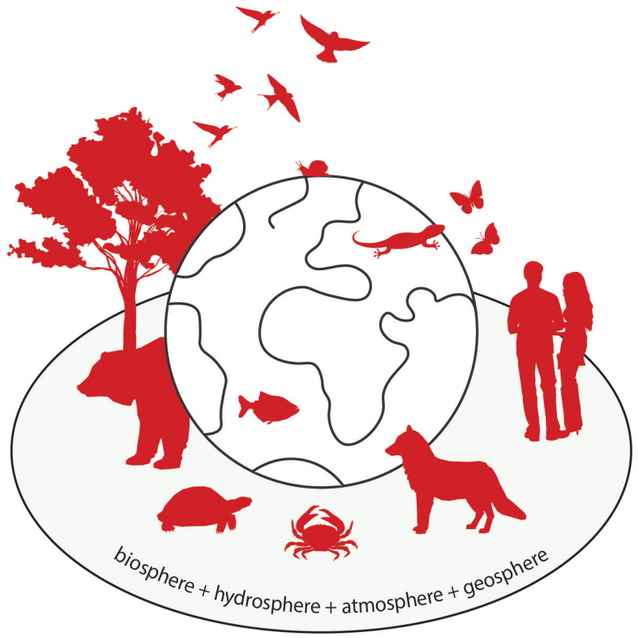
iamge 39, Vrijburcht, Amsterdam

co-living + co-housing

place of passive energy + leisure

soft +open space

image 40: Kalkbreite, Zurich, courtyard



a thriving planet

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Images

Figure 1 own image
Figure 2 own image
Figure 3 own image, based on Streefland, 2021
Figure 4 own image
Figure 5 own image, based on Gehl, 2011
Figure 6 own image
Figure 7 own image, based on Duffy, 1992, Brand, 1994
Figure 8 own image, based on Hill, 2020, Moreno, 2020
Figure 9 own image, based on Graeber, 2021
Figure 10 own image
Figure 11 own image
Figure 12 own image, based on Sim, 2019
Figure 13 own image
Figure 14, own image

Image 1 Bureau SLA, Almere Oosterwold
Image 2 Delft, Retrieved on 15th of March, from https://twitter.com/modacitylife/status/1507798722146623494
Image 3 Hemonystraat, De Pijp Amsterdam. Retrieved on 11th of Februrary, from https://mobycon.com/updates/streets-as-places-for-people-inspiration-from-amsterdam/
Image 4 Frans Halsstraat woonerf, Amsterdam.
Image 5 Adler, B. Brooklyn Grange Rooftop Farm
Image 6 Totté, 2019

Reference projects

Mehr als Wohnen, Zurich
image 7 https://architectuurwijzer.be/wp-content/uploads/2018/01/Hunziker-Areal_haus-E_gevel-1.jpg

image 8 https://architectuurwijzer.be/wp-content/uploads/2018/09/20180911_-presentatie-voor-SPRYG_WEB.pdf
image 9, https://www.mehralswohnen.ch/

Kalkbreite. Zurich
image 10 https://www.alfred-mueller.ch/files/content/Forum/Magazin_66/66_02_Vom%20Luxushaus%20zum%20Wohnkoffer/Kino_Houdini.jpg

image 11 https://www.michelenastasi.com/portfolio/kalkbreite-zurich/

image 40, https://www.michelenastasi.com/portfolio/kalkbreite-zurich/

Brutopia, Brussels
image 12 Totté, 2019, p.
image 13 Totté, 2019, p.

La Borda, Barcelona
https://www.archdaily.com/922184/la-borda-lacol?ad_source=search&ad_medium=projects_tab
image 14, Brysch, 2019
image 15, Brysch, 2019
image 16, Brysch, 2019
image 17, Brysch, 2019

Schoonschip, Amsterdam
Space & Matter
image 18 https://global-uploads.webflow.609a7c7233bd7699ae07b5f5/61542cf011534c683bf8bd06_Isabel%20Nabuurs09opt.jpg

image 19 https://global-uploads.webflow 233bd7699ae07b5f5/60b8e3b52c6faef39f8ee383_2-4%20schoonschip.jpg

image 20 https://global-uploads.webflow.bd7699ae07b5f5/60b8de8cdc09a55b058b2939_0-1%20schoonschip.jpg
WG Terrein

Broedplaats Lely, Amsterdam
image 21 https://urbanresort.nl/lely/
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image 25, own image
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Spreefeld, Berlijn
image 28, Ballhausen, 2014
image 30

Qville, Essen (BE)
https://www.archdaily.com/search/all?q=qville&ad_source=jv-header
image 29, https://heem.be/projecten/qville/
image 31

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image 32, own image
image 33, own image
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Collectief Noord, Antwerp
image 34, Bergh, 2019

Hof van heden:
image 35, https://www.groenblauwenetwerken.com/uploads/Hof-van-Heden-Rob-van-der-Steen-133x100.jpg

San Riemo, Munchen

Space s, Eindhoven
image 37, https://space-s.nl/wp-content/uploads/2019/05/149-1024x576.jpg

Vrijburcht, Amsterdam
image 39, https://www.vlugp.nl/wp-content/uploads/2014/05/Foto-eten-terras-800x