**The Domestic Public:
Territoriality in Shared Space**

by

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Dalhousie University is located in Mi'kma'ki,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

Contents

Abstract

Shared housing in North America is largely inadequate, because ideas of collective ownership are incompatible with contemporary views on private property. The thrust of the thesis is to investigate more fundamentally what it means to share space, identifying ways it can be more deeply manifested through architecture. This investigation first interrogates the ways that the public ultimately becomes private in housing, paying attention to the nature of boundaries and apertures and the sequence of threshold spaces these boundaries delineate. The result of this is a set of design principles, which are implemented towards a co-housing project sited in Halifax's South End, using two schemes geared towards different user groups, implementing the concept of what I'll be referring to as the domestic public. This is given further theoretical support through precedent analysis, investigation of Dutch Structuralist in-between concepts, and the distilling of these concepts into a more fundamental framework centering territoriology.

Acknowledgements

I'd like to thank my supervisor Ted Cavanagh, as well as my advisor Michael Faciejew, for the advice, guidance and criticism provided throughout the thesis.

I'd also like to thank the friends, family, and colleagues that supported and motivated me during this time.

Chapter 1: Introduction

As it currently exists, shared housing in North America is quite inadequate, primarily due to it being conceived of as an economic concession above all else. This has to do with the broader western mindset of individualism stemming from neoliberal economics. The experience, in the case of housing, is that if something is not owned in an individual capacity, it is not in fact properly owned. Kenny Cupers, in *Neoliberalism on the Ground*, noted that:

> ...the application of human territoriality to public housing ultimately came to support the position that individual private property was an innate tendency in human beings and therefore the logical basis on which to organize contemporary society. (Cupers 2020, 371)

This is then reflected in the ways that housing is manifested, superficially with regards to provocative images of sweeping and dreary suburban landscapes, fenced in atoms, though I would argue that there is greater insights to be gleaned from how densified housing models behave, the way that apartment are so tightly packed as "stackable spatial crystal[s]" (Mubi Brighenti and Kärrholm 2020, 46), and yet so distant from one another in all aspects but physical. This surely is either a result of, or contributor to, sensations of alienation that permeate modern society.

Because the idea of collective ownership is incompatible with contemporary views on private property, when compelled to share ownership of something as fundamental as your dwelling, there's a territorial anxiety attached to it that manifests in the way the built form is constructed and interacted with. The sensation of agency in one's own dwelling is a particularly important thing in the foundation of one's security in society, for reasons that are both quite

concrete and having to do with material concerns, as well as emotionally.

Part of the reason for ameliorating shared housing is that shared housing, as a model, isn't going anywhere. Cities are generally expected to grow, and North America, fairly undeveloped in that regard compared to other regions, may eventually see greater segments of the population in denser living situations. In investigating the ways that close, densified housing types behave, the intention is to yield principles that better inform how architecture can be created to ameliorate a guarded, insecure, and atomized experience of these territories.

Within the design outcome, the co-housing project is imagined to be set up as co-operative, in which the co-op and its members own the project and make administrative decisions regarding management. In this case, individuals would not technically own their private dwelling but would rather maintain a share of ownership in all dwellings and shared spaces of the project.

Chapter 2: Analyzing Public and Private

There are two main ways I intend to evaluate the treatment of public and private within buildings. Firstly is the treatment of boundaries and apertures used to separate different spaces from one another. Building off this, the second item, threshold sequence, is the nature of the delineated spaces, and the sequence or hierarchy of public to private that these spaces serve. Through this, a strategy reveals itself, a particular kind of space sitting between true public and true private within this sequence that I will refer to as the domestic public.

Boundaries and Apertures

Boundaries and apertures simply refer to the treatment of transitions between different spaces. Things like opening size and transparency affect this. A narrow opaque door, an empty unsealed gap, and a wide, translucent panel all suggest, prescribe, and permit very different things with regards to privacy and control over these spatial transitions by users. In his famous essay "The Sociology of a Door-Closer", Bruno Latour (pseudonymously operating as the technologist Jim Johnson) anthropomorphizes doors by way of comparing the actions of porters and the mechanical door-closers which replaced them, both of which permit the users of the door to forgo the responsibility of closing this door themselves (Johnson 1988, 301). The replacement of porters by mechanical means is similarly interrogated, in that the simple mechanical device has made obsolete what was once a viable employment position, something that is non-human ultimately acting upon humans in tangible ways.
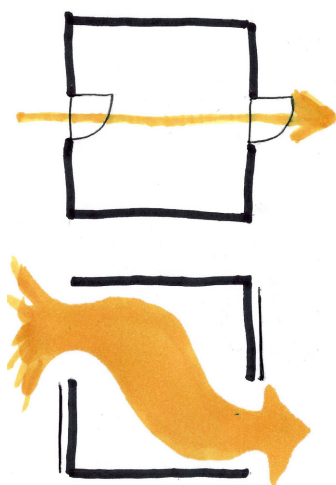

Fig. 1. Different aperture types imply connection or disconnection between spaces. As one proceeds from left to right, larger openings create a sense of continuity between separate spaces, and paths through the space may diverge into wider 'flows', indicated by the arrows.

He muses further that it is only through the existence of walls as enclosure devices that necessitates the existence of doors (Johnson 1988, 299). The granular examination of the cause and effect of various peoples and the objects which fill their world forms the basis of Latour's actor-network theory, which seeks to explain phenomena by treating both humans and objects as simultaneously actors and actants. The empowerment of objects in this regard is noteworthy, to Latour, "free will and intentionality is not a prerequisite of action and that both human and non-human actors are better characterized as actants, as something that is made to act"(Fallan 2008, 83).

With the notion then of an object's capacity to 'speak', we may inquire, in the spirit of Latour, as to what exactly is being said and what is being done by the particular boundaries and apertures found in residential space.

In a typical apartment building, the front door to the dwelling will almost certainly consist of an opaque door, without glazing, of either wood or steel. This door might also contain a peephole (Fig. 2.), which allows the occupant to confirm the identity of the one knocking without even betraying their presence to them. These characteristics of the boundary condition are rather fortress-like, reflecting a territoriality and defensiveness built into the dwelling itself, and this becomes especially apparent when comparing this condition to another.

By contrast, a typical suburban home may have a door with glazing at face height. The glazing itself may be frosted, which allows the one knocking to see the occupant as they approach the door, while also hiding the identity of the one knocking until the door is opened. This is functionally

opposite to the peephole, it provides the knocker with more information and the occupant with less. An equivalent exchange of information is taking place. In some cases, this translucent front door may be equipped with a secondary screen door, allowing the occupant to dispense with the primary door altogether and replace that boundary with one allowing all air, light, and information to pass readily through. The boundary condition described here is one that is objectively less defensive than the apartment's, and represents a different and more lenient attitude toward territoriality.

Are the security concerns of the two occupants different from one another? It could be readily argued that the security of the house's occupant is in greater peril, given their physical detachment from neighbours. Not only that, but the public at large is free to approach the door of the homeowner off the street, whereas the apartment dwellers may only expect a knock at the door to come from an individual in possession of the key or passcode to the building, or an otherwise permitted guest of a building resident. Yet it is the apartment dweller whose private space is guarded so rigorously.

Riken Yamamoto, in the article "Public/Private: Concerning the Concept of Threshold", calls attention to this discrepancy without citing a territorial basis in its reasoning, though he is fully cognizant of the anxiety it reinforces.

> One other thing I felt, having lived in an apartment building, is that an apartment layout is completely cut off from the outdoors. I have often studied the closed or open character of, or communication between inside and outside in, housing, but it is quite frightening to actually live in such housing. I climb stairs but all I see are closed steel doors; I know absolutely nothing about what goes on inside the units. Once I enter a unit and close the door, I am in another, completely isolated world. (Yamamoto 2009, 128)
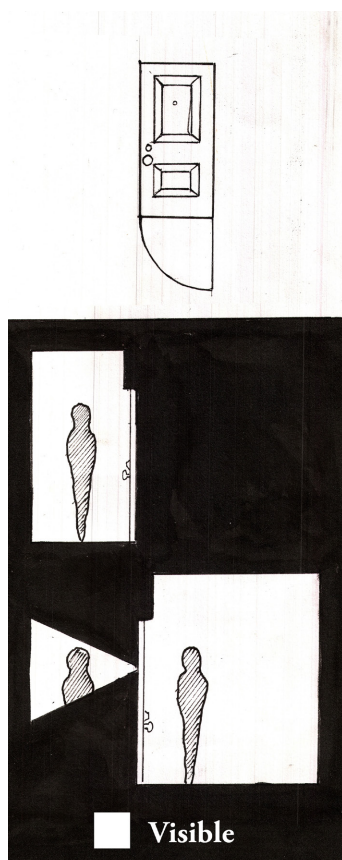
Fig. 2. One sided transparency of a peephole door, showing what information, if any, is visible to a viewer on each side of the door. The individual on the inside of the door can see the outsider entirely, the ousider can see nothing.

Ultimately these two aperture types represent the issue of security. This is represented outwardly, in regards the security of physical space, and inwardly, in regards to the sensation of security experienced by the occupant. The apartment dweller, for whatever reason, experiences a greater degree of territorial insecurity than the homeowner, and as such, requires a greater level of physical security to ease those anxieties. Through the lens of Latour's actor-networks, we can understand this is not ameliorated by simply transforming the boundary condition. Even in accepting that modification of public/private can modify the experience of the user, this difference in securities created the difference in apertures, not the other way around. For a house door to replace an apartment door, the source of anxiety which necessitated the apartment door must be understood and addressed first.

Within the design outcome, translucent sliding pocket doors are the preferred treatment of the threshold condition between the private and shared spaces in both schemes. The reasons are several, but all have to do with attempting to dissolve this boundary to the highest degree possible while maintaining the function and possibility of control and privacy.

A swing door, when opened, hangs ajar, entering the space beyond it, reshaping it to a degree. Even when fixed in an open position, its visible material differences from the wall on which it's affixed indicate that something about the two spaces at the threshold this door occupies are different from one another in a way that necessitates enclosure. It can be inferred from the qualities of this sort of door that it 'desires' to be closed, that is, closed is its preferred state, from which it is periodically made to be opened.
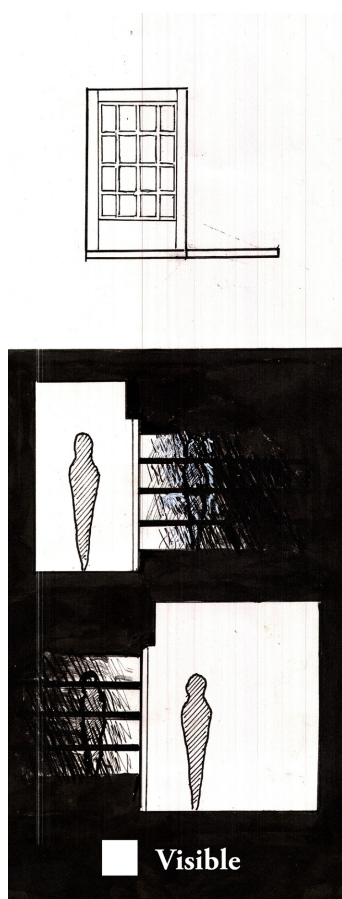
Fig. 3. Transparency of a sliding pocket door, modeled after Japanese shoji. Both insider and outsider have an obscured perception of what lies on the other side.

Conversely, a sliding door is just as comfortable in its closed state as its open state. In both cases, the structure of the door remains visible, reminding one that these spaces are different and thus must be secured, though it doesn't hang ajar into the space, demanding to be dealt with. Because of this, there is also the freedom to increase the width of this door as its swinging into the space is not a consideration, and as such its open state may be more open than that of a swing door.

Making this door into a pocket door does away with the implications of its open state. While tucked away, it ceases to exist, obscuring the possibility of a closed state for this threshold. While closed, it retains all the suggestions of privacy and control.

With respect to transparency, to be fully opaque is to be fully private, to make the closed just as impermeable to information as a static wall. To be fully transparent is to hide nothing, being divided by a physical barrier in terms of mobility but not in terms of information. This reduces the capacity for privacy, while closed or open, to zero. Translucency occupies the middle, where a partial transmission of light is possible without definition. It maintains control while still connecting its two sides.

To summarize, if a typical solid, opaque swing door is the ultimate expression of privacy possible for this application, then a translucent pocket door offers the ultimate expression of openness, dissolving entirely when opened, but still offering total control over the level of invitation or disinvitation into the private space, avoiding what Bill Hillier referred to as a permanent and intrusive coexistence (Kärrholm 2004, 31).

Another boundary condition which is relevant is the glass wall system (see Fig. 4-5) in the gabled scheme between the interior shared space and the courtyard. For this, a curtain wall composed of large sliding glass panels on two parallel tracks is utilized, half of the panels on one and half on the other. Rather than every other panel being alternately fixed and operable, allowing them to 'double up' for evenly spaced, single width openings through the wall, instead the panels are free to move along the entire length of their respective tracks, permitting any combination of solid and void space between 50% and 100% enclosure. While that less dynamic system would introduce porosity to this boundary, it is ultimately more uniform than the designed system and affords less control of the space and boundaries to its users.
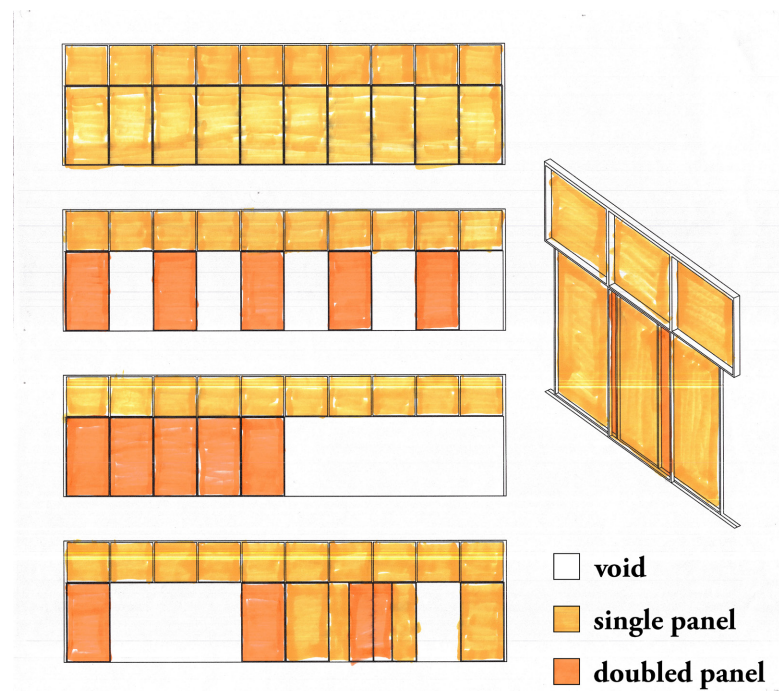

Fig. 4. Glass panel system used in design outcome, showing different configurations. It can be used to create any combination of aperture or closure between 50% and 100% enclosure.
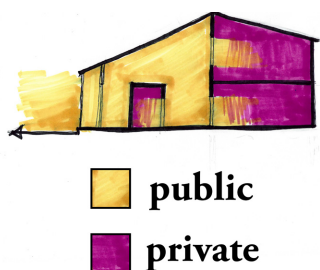
public

private

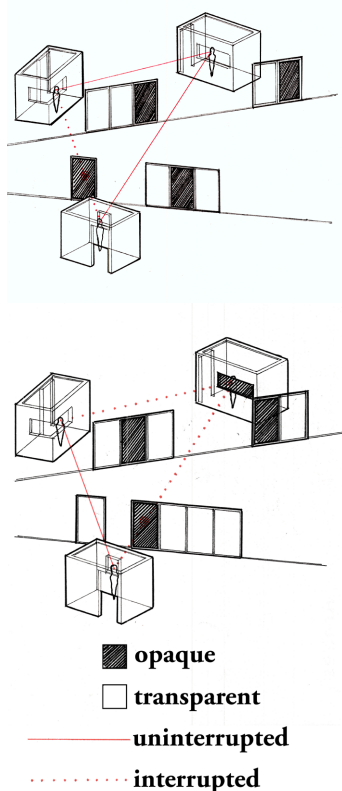Fig. 6. The main hall 'leaking' into the smaller spaces through apertures.
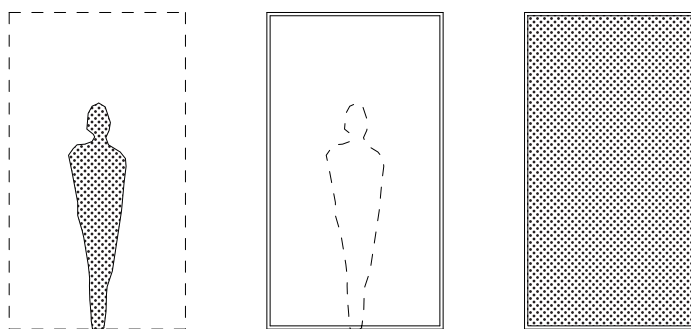

Fig. 5. Three 'states' of the movable wall panels. To the left, void, allowing all information. In the middle, glass, which allows sight but nothing else, and to the right, blinds, which blocks all information.

Additionally, the panels are equipped with roller blinds, which introduce a third experiential state (solid) to the panel's potential, along with transparent and void states. This gives the user of the space the highest degree of control to generate a particular spatial form and level of exposure, and further pushes this wall into something that may be characterized more so as a 'deployable appliance' than mere architectural feature. The attitude being taken here can be compared to Steven Holl's Storefront for Art and Architecture , whose rich and dynamic facade is operable to the degree that any singular static depiction fails to capture the character of the project.

There are three different window conditions in the project worth discussing, windows along the exterior of the building, those along the interior, and those in the kitchen units. The exterior windows only function is to allow light into the units, as such, they are non operable. A physical connection to the outdoors beyond light or information is not prioritized in this case. Interior windows (Fig. 9), as well as the kitchen windows, on the other hand, serve as apertures into the shared domestic space. Because of this, these windows utilize no glazing, and instead consist of operable shutter
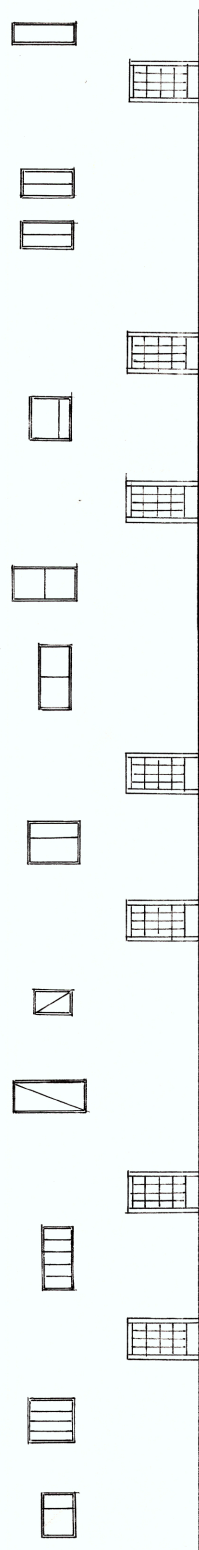

opaque

transparent

uninterrupted

interrupted

Fig. 7-8. Panels and blinds may be used to block or frame views. The two drawings show different configurations of the glass wall and kitchen shutters to join or disjoin line of sight.

panels that may either open fully into the space or be closed for an opaque barrier between the two. These operable shutters exist in a diversity of forms in order to give some non-uniformity to the space as a whole, lest the project, intended as an exercise in collective spatial organization, become so homogenous as to be bleak and discouraging.

The user control afforded by the glass wall system, as well as the other operable aperture conditions, agrees with Kenny Cupers, who on the subject of 20th century experimentation in social housing, found that it was determined "individual inhabitants needed to be given an active role in making their habitat" (Cupers 2020, 366).

Threshold Sequence

By threshold sequence, what I mean is not the threshold of a space itself (which I am referring to as a boundary or aperture) but rather the state and complexity of the sequence of spaces that exist between public and private extremes in a given architectural context, and the nature of these spaces. For example, a foyer is a space in its own right, that exists physically between the public street and a private dwelling, and exists experientially as a buffer between those two kinds of space, to smooth the transition between public and private.

Till Boettger engages with this concept in the book Threshold Spaces, though this is primarily in the context of public or commercial buildings. About residential buildings though, he does state:

> Interesting new insights can be expected from an analysis of residential spaces, however, as they must provide their residents with a private realm, resulting in different roles for hosts and guests. Threshold spaces are particularly important in living spaces because the transition zones are the places where people approach each other. People often

Fig. 9. Non-uniformity in interior windows of the design outcome.

protect themselves in their private living areas and prefer to encounter others in semiprivate spaces, where the residents have control over their guests' depth of immersion. (Boettger 2014, 126)

The apartment and house can again be compared as examples of simple and complex threshold sequences. The typical apartment exits the street into a small vestibule, whereupon key, passcode, or other permissive device is required to transition into a foyer. Smaller buildings may skip the foyer altogether. From there, elevators and stairs proceed directly to hallways, where the highly secure doors enter the private units. Within the unit itself, the entryway, kitchen and living areas are often merged into a continuous space, which lead off to however many bedrooms are present. In a studio the apartment consists of one singular space. In this sequence there are between two and four discrete spaces that exist between the most public (street) and most private (bed).

In the typical house, the street leads to a yard, which may or may not have a porch which comprises a space itself. There is the front door which leads to a foyer, which may then branch off into any number of discrete spaces that embody different levels of privacy (kitchen, dining, living, stairwells, bedrooms, etc).
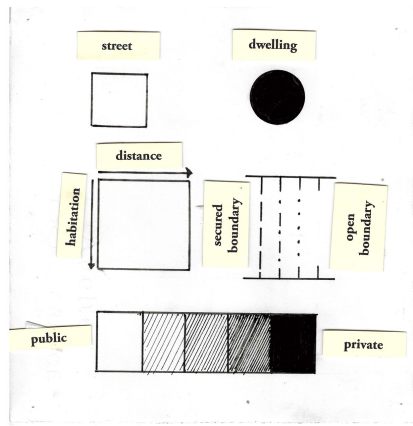
Simply counting the number of transitions doesn't tell the whole story. A key difference in the discrete spaces found in the apartment and house contexts is that while the house contains a number of spaces in which inhabitation is possible, the apartment contains very few, or none. Hallways, vestibules, stairwells are explicitly circulatory, they contain no other function. A living room, or a kitchen,

or a yard permit occupation by guests and demand less encroachment into the most private realms of the house.
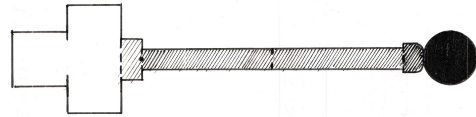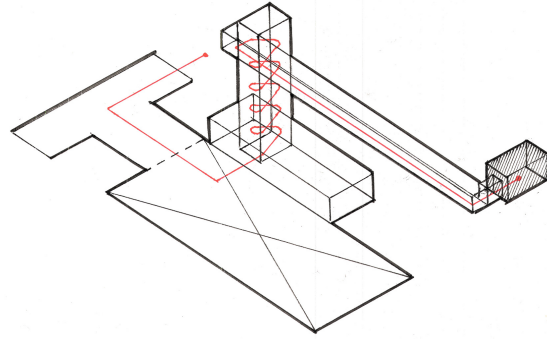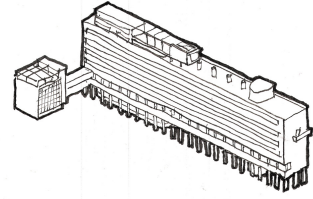
Something which may be further distinguished is that the shared—or semiprivate, to use the Boettger's language—spaces of the typical apartment building, outside the unit, are not experienced as an extension of the home, whereas the semiprivate spaces of the house which are outside the house, such are the yard or porch, are. It would be reductive to say that the lobby of an apartment building does not permit habitation; they are often much more spacious than necessary and feature furnishings like seating and tables. It would be more accurate to say that these kinds of spaces are more often than not underutilized in this way, despite the residents of a building having the 'right' to occupy this territory. A reason for this is that the extensive separation of these spaces from the private domain through hallways and elevators inhibits their consideration as a viable site for social interactions. So while they are in the literal sense a threshold space along the sequence of public to private extremes, the nature of the circulatory threshold spaces that exist between these semiprivate and true private spaces is the real cause of this discrepancy.

The existence of a complex and well articulated threshold sequence, consisting of discrete spaces fit for inhabitation and not just circulation, is what allows for the kind of territorial security reflected in the house's aforementioned lenient boundary condition. This complexity is lacking in apartment buildings, or improperly implemented, and this deficiency reinforces a territorial anxiety.
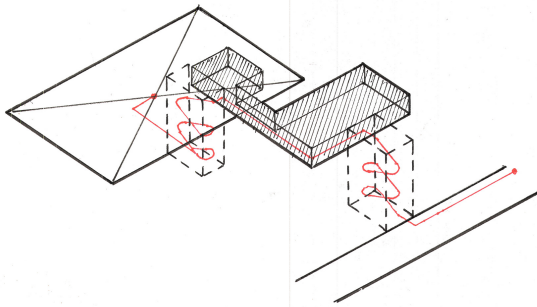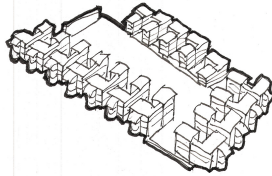
Narkomfin

Hotakubo Housing

Amsterdam Orphanage

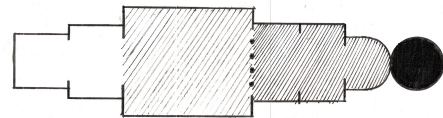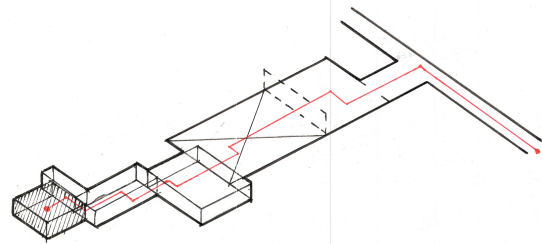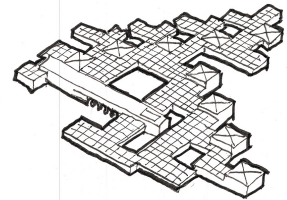Labels in legend: street, dwelling, distance, habitation, secured boundary, open boundary, public, private

Fig. 10-13. Threshold sequence of a number of precedent buildings. Each drawing has a representational sketch in the top right corner, and in the middle, a more abstracted wireframe drawing of spaces, with the red line showing the path taken as one navigates the threshold sequence. The bottom utilizes a notation designed to describe the relative privacy of spaces, the closed or open nature of the boundary between spaces, and the distance required to travel through, as well as the 'habitability' of the spaces.
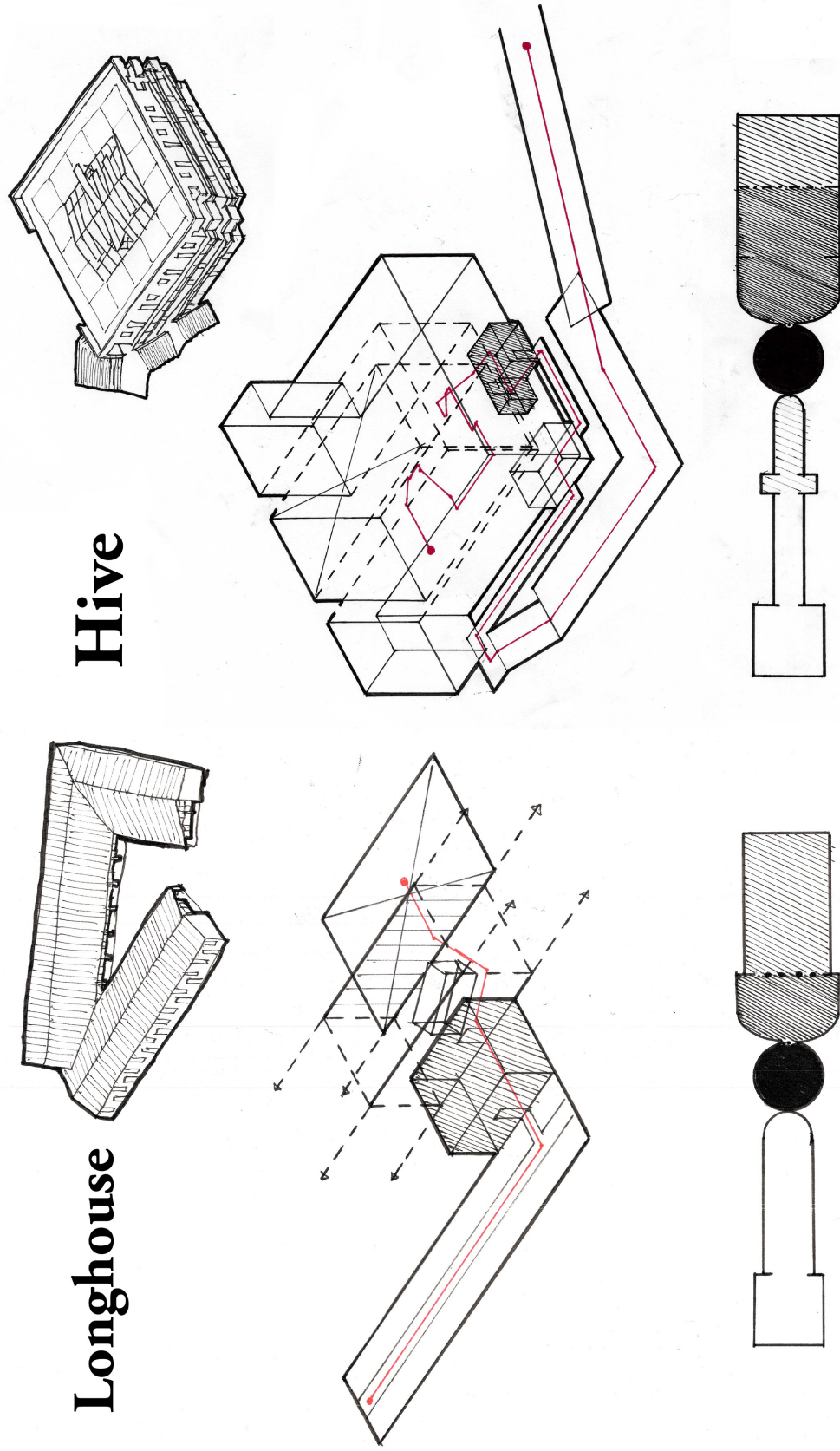
Hive

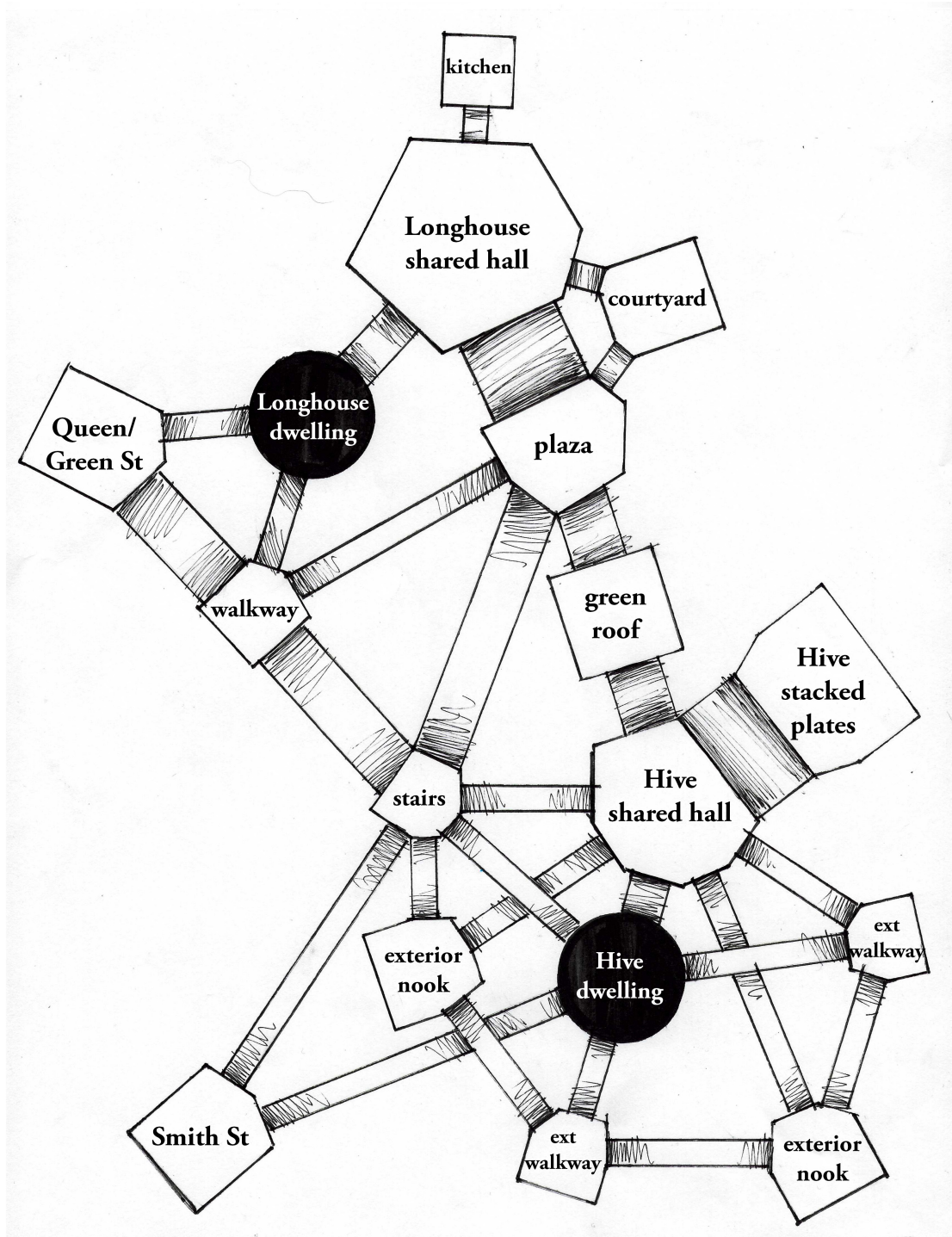# Longhouse

Fig. 16. A different style of diagram attempting to describe threshold sequence within the design outcome, merging both schemes and addressing the ways all discrete spaces within the project site are interconnected. The two private dwelling types are shown as black circles, and the width of the connections corresponds to a perceived 'openness' or porosity of the boundary condition.

Chapter 3: The Domestic Public

Key Principles

By imagining the transition from public to private as being a sequence of threshold spaces, what emerges is a desire to insert a more complex sequence into the apartment context. From that, we can imagine a kind of 'domestic public' that exists as an intermediary between the public and private realms that is fit for habitation, and brings the experiential qualities of domestic spaces outside the explicitly private realm. Through the interrogation thus far, I believe I've identified three characteristics of this kind of space: exclusivity, proximity to domestic private, and program neutral inhabitation, which shall each be explained in detail below.

Exclusivity

Fig. 17. Exclusivity of a shared space. To reach the innermost space (in yellow), one has to first pass though the surrounding dwellings.

By incorporating a degree of exclusivity, you can create space that people feel they can own together, and thus inhabit with the same agency as that of the domestic private proper. By reducing the number of stakeholders for a given space from 'the world', an incomprehensible number, to 'the community', a fixed number of individuals who you presumably are familiar with, you turn 'the commons' into 'your commons'. It makes possible the establishment of a kind of community culture that can be familiarized with, enhancing the sensation of security, trust, and possession of and in that space. An example of this are Riken Yamamoto's Hotakubo Houses.

Built in 1991, the Hotakubo Housing project features sixteen blocks of housing, each containing five to eight units. The blocks are arranged into three separate buildings that
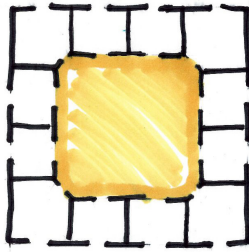
form a wedge enclosing a shared outdoor space, which is accessible only to the residents of the housing complex. Entry to the units takes place from the street side. From the units, the courtyard must be accessed via a second exit, placing this shared space at the end of the sequence of spaces rather than between public and private extremes. While this isn't expressly necessary to achieve practical exclusivity, I would argue the use of through-units, requiring passage through the 'owned' territory of the private realm, serves to extend this sensation of exclusivity.

This implementation of the courtyard is interesting for a secondary reason which coincides with the second characteristic of the domestic public.

Proximity to Domestic Private

It is important that this kind of space adjoins directly to the domestic private rather than through circulatory elements (to the highest degree possible), in order for it to be successfully incorporated as a part of a singular contiguous domestic. Shared amenities, be they pools, gyms, rooftops, etc, are common in many—usually large—apartment buildings. These amenities are certainly exclusive, and residents may socialize within them as a common space to which they each have the 'right' to occupy. However, the efficient and crystalline nature of highly densified housing types inevitably means that for a single shared facility to be accessible to dozens or hundreds of residents spread across many storeys, this access must take place through many expressly circulatory passages, meandering hallways, elevators, stairwells, and doors (Fig. 18). These passages, by way of their built form, are hostile to habitation, in the sense that they are not fit to support any kind of extended
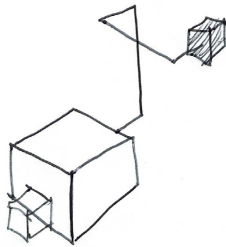

Fig. 18. Distance between discrete spaces within a threshold sequence. The line represents a path through hallways and elevators, which separates the spaces experientially.

occupation, only bodies in motion. The considerable distance of two habitable spaces—the private dwelling and the shared facility—from one another, both in physical as well as temporal space, causes the territories to become disparate. One becomes a 'destination' from the other, reached through travel. This presents difficulty in the incorporation of the two into a singular continuous domestic territory.

Returning to the Hotakubo houses just mentioned, the shared outdoor space is immediately accessible from the backs of the units, via open staircases in the case of elevated units, rather than through the aforementioned passages. While the staircases are in the technical sense expressly circulatory, unlike, for example, the in-between stairwells of Documenta Urbana dwellings discussed at length by Herman Hertzberger (Hertzberger 2005, 35-38), they are open to the air and retain visibility to the courtyard. This lack of enclosure converts the stairwell in a sense to a kind of device deployed within the larger shared space rather than a discrete space in its own right. Yamamoto's attitude displayed here is in agreement with Kurokawa's earlier writing on Metabolism, who stated that "Western space is discrete and space in Japan is continuous"(Kurokawa 1994, 149).

Something that can be taken from this is that in implementing a domestic public, in cases where circulatory passages are necessary between the private and shared space, they ought to minimize enclosure as much as possible.

Program-Neutral Inhabitation

A domestic public ought to be programmatically neutral and non-prescriptive, or at least be permissive of such occupation,

as the function of it is inhabitation as a continuation of the home's territory. The previously cited examples of shared facilities in typical apartments often fail in this regard. Pools and gyms, while exclusive to the members of a particular community, are specific in nature, and as such are not welcoming to individuals not directly participating in the program of the space. A domestic public surely may contain programmatic elements, this can incentivize use of the space, but it must be equipped to support neutral and 'purposeless' social habitation.
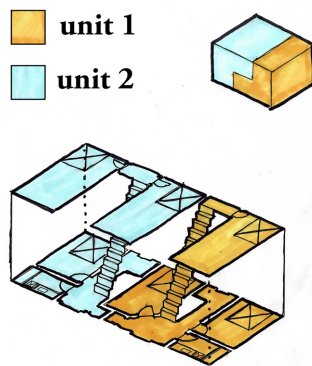
Implementation

Within the project, the domestic public has been rendered as two schemes (Fig. 21, 34), the Longhouse and the Hive:

The Longhouse

The Longhouse (Fig. 19-22, 24-27) takes the form of a triangular wedge of laterally bisected gabled buildings which frame an enclosed courtyard. The domestic public of this scheme is located on the interior half of this bisection.

Fig. 19. Two story three bedroom units used in the Longhouse, overlapping one another.
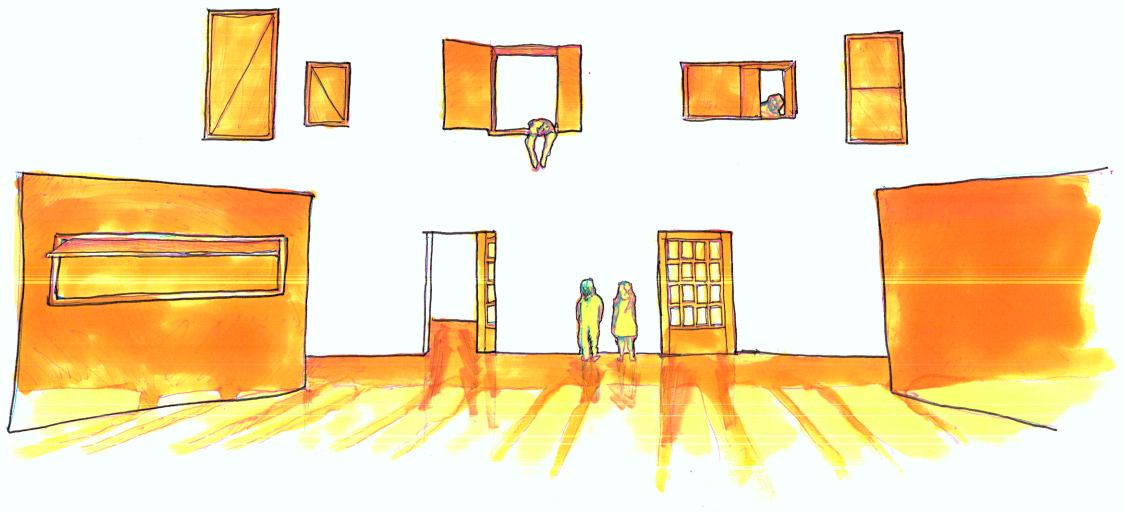

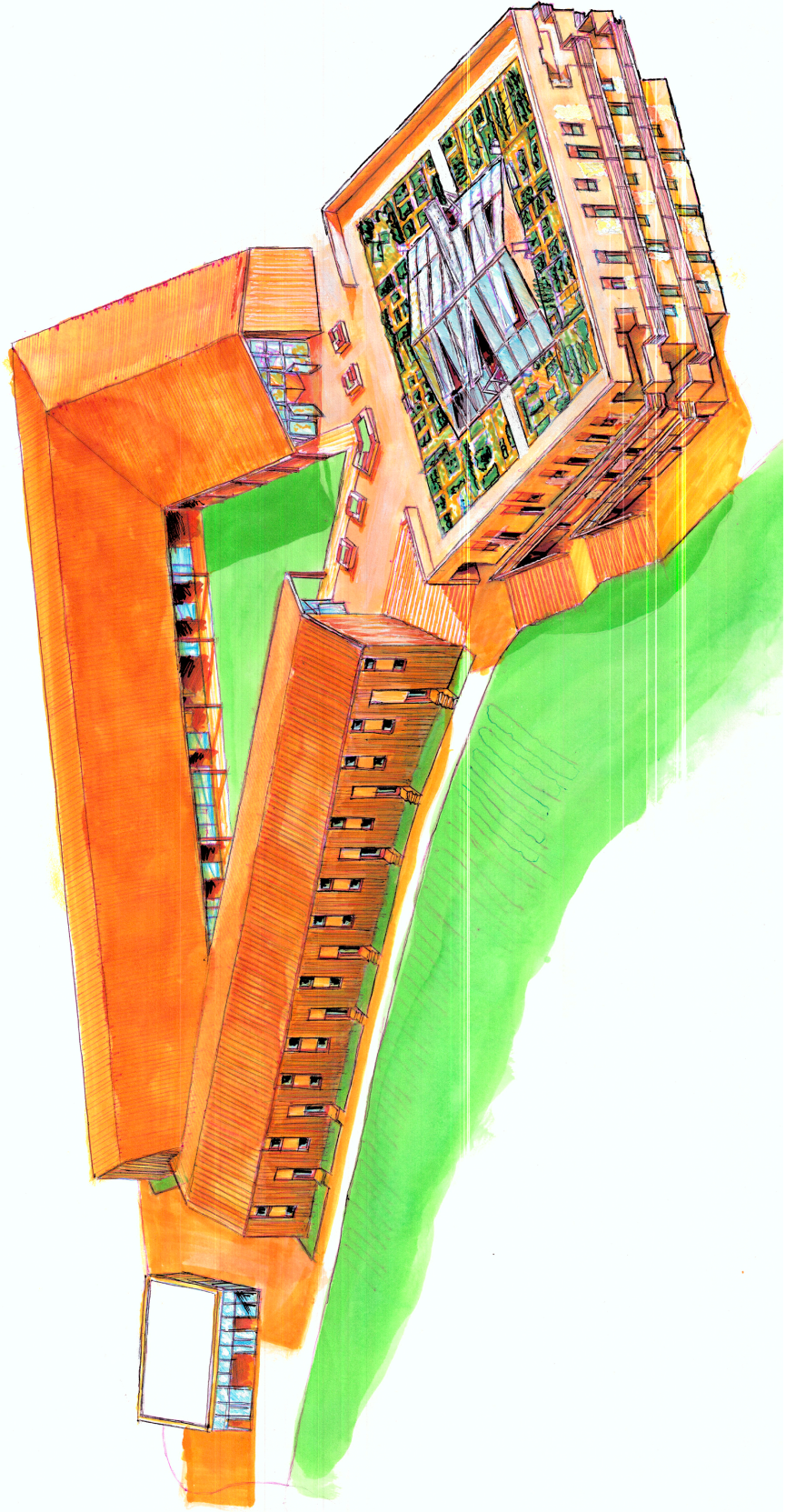Fig. 20. Longhouse vignette highlighting the interior windows.

Fig. 21. The two schemes of the design outcome. The square building in the lower right is the Hive, and the wedge of gabled buildings is the Longhouse.
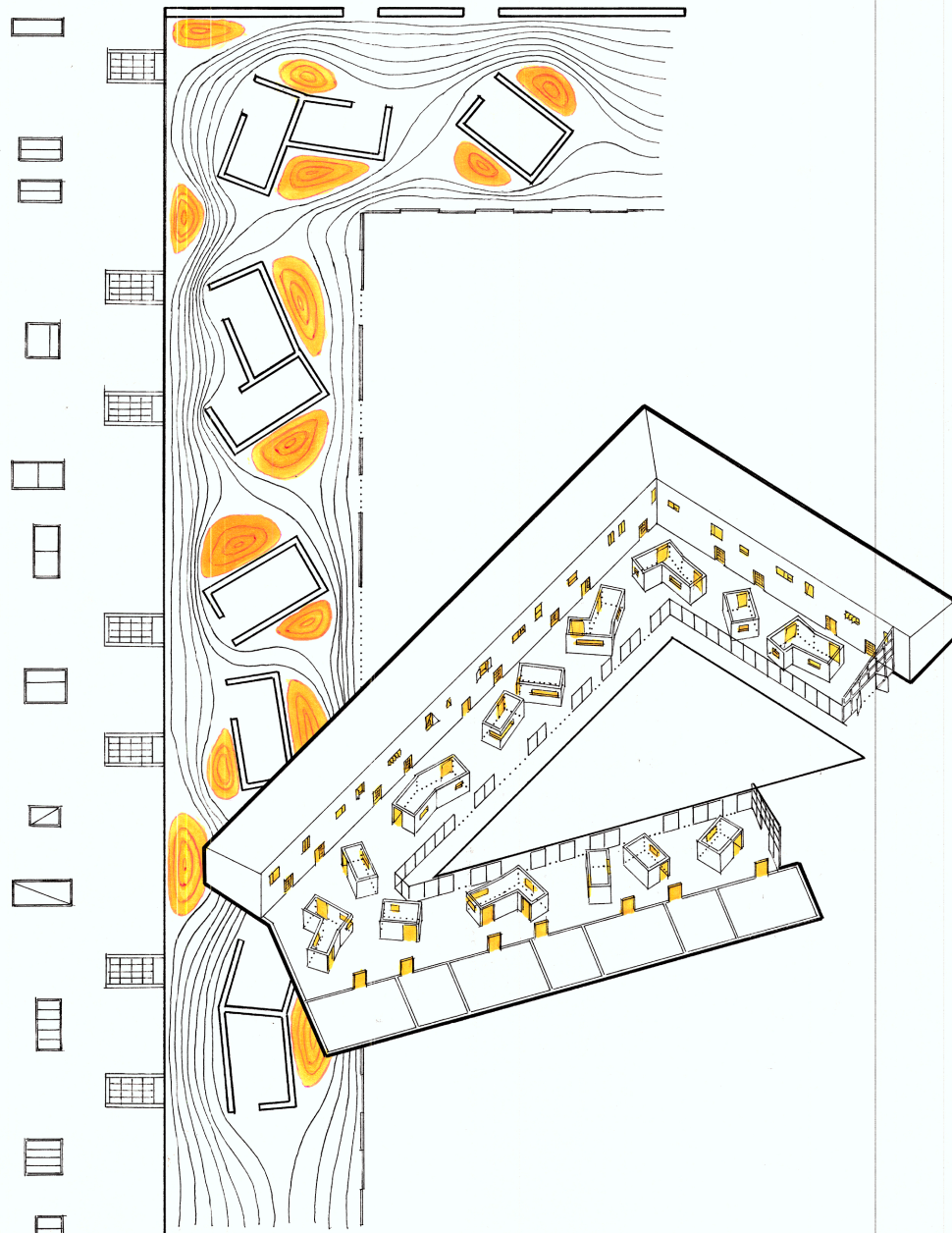
Fig. 22. Domestic public of the Longhouse scheme. In the plan, scattered kitchen units suggest 'flows' of movement (black lines) as well as 'pooling' (yellow) where habitation can occur. The isometric drawing shows boundaries and apertures in yellow, in the form of the doors to the kitchens and dwelling units, as well the shutter windows present for each.

Programmatically it's suited towards a user group of families, with three bedroom residential units (Fig. 19).

Within the domestic public of the Longhouse are scattered kitchen units throughout the space, one per unit (Fig. 22). One reason for this is that the separation of the kitchen
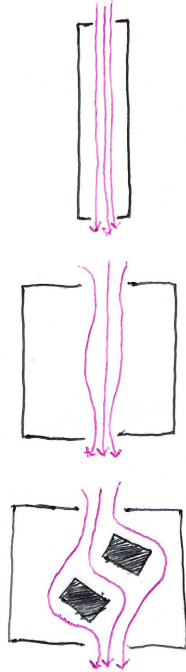
Fig. 23. Objects interrupting circulatory space. The top space is narrow and clear, directing circulation tightly. The middle space is clear and more open, which allows circulation to spread but still proceed straightforwardly. The bottom drawing features objects interrupting circulation, which causes paths to diverge and flow organically around them.

spaces from the private dwelling spaces, as individually rather than collectively 'owned' spaces, assists in the maintenance of a continuous experiential 'domestic', but that doesn't explain the non uniformity of placements. They are strewn about, like cast dice, in order to better construct neutral and habitable space in the voids amongst them. This also, along with the aforementioned non-uniformity of the operable window shutters within this space, create a domestic public that is more visually and spatially diverse.

Fig. 24. Perspective drawing of the Longhouse showing the glass panel system and kitchen units, with users inhabiting the space.

Fig. 25. Close up plan and section of Longhouse.
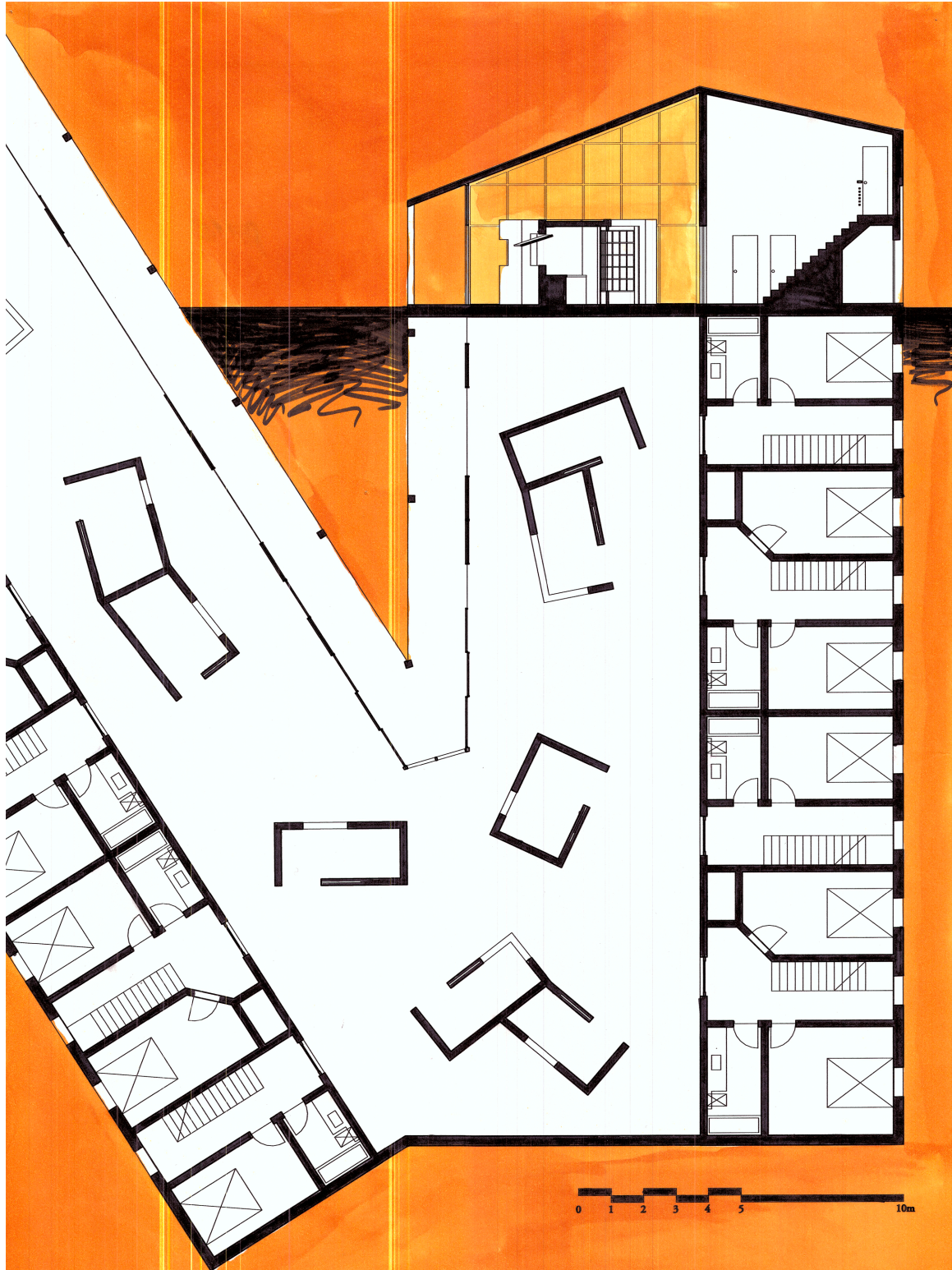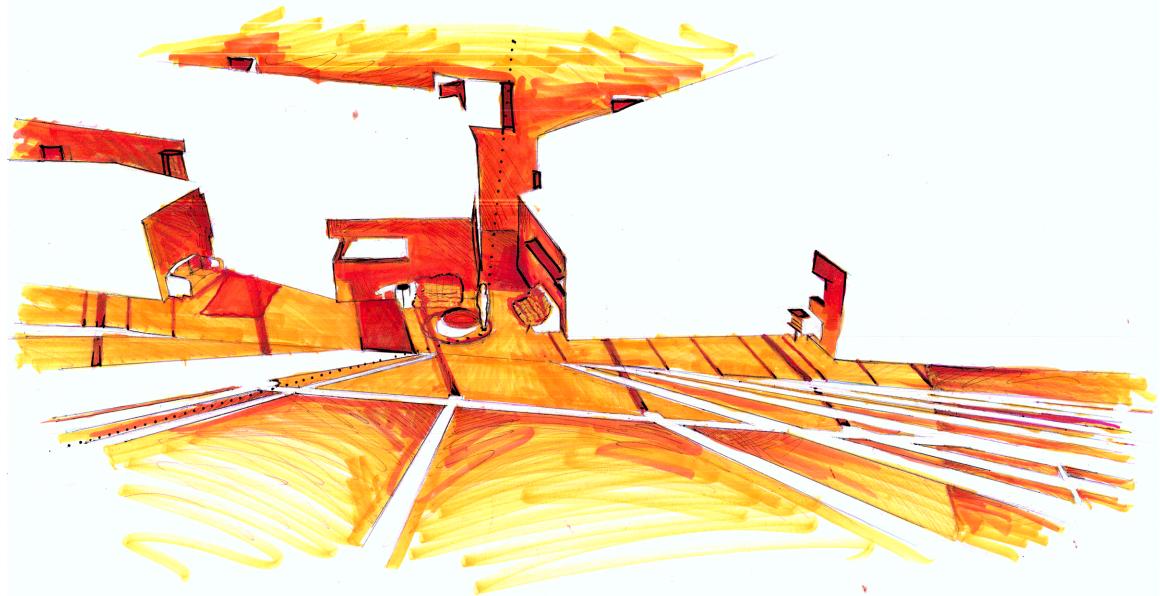
Fig. 26-27. Pair of drawings discussing transparency and the management of visibility in the Longhouse. The lower drawing shows everything that is visible in 360 degrees to a figure standing at the designated point, anything obscured is rendered as blank. The upper drawing shows a first person cone of that exact view, framed within the dotted lines of the lower drawing.

The Hive

The Hive (Fig. 28-33) reuses the concrete skeleton of the existing square commercial building to create a series of central domestic public platforms which float within an atrium surrounded by studio units intended for adult individuals. The overall height of the existing building has been reduced to place the now green roof at the same elevation as the courtyard, taking advantage of the precipitous grade shift of the site to make a three storey building below this, which meets the street at the back of the site.

It was imagined to address a weakness of the Longhouse format, that is its limited density. The Longhouse has a dependency on its situation around a singular shared courtyard which operates fairly strictly on one plane. How might a version of the domestic public, which embodies the most crucial experiential qualities of that space and territory, be rendered in a format that is free to scale vertically, and stack?

To accomplish this, the central platforms are staggered a half level from the units, such that an individual standing in any particular spot has a closeless and line of sight to the opposing features both above and below them. The general assemblage of the building can be imagined as a series of bands or layers (Fig. 29), in which each band makes use of one or more items from a kit of parts. The units, which like the longhouse contain inward facing shutters, open to kitchen counters in the public space, which may or may not project further into the circulation route or contain seating. Opposite this, forming the railing are units either made from glass, perforated metal, or solid opaque units containing benches and tables. Stairs are placed erratically along
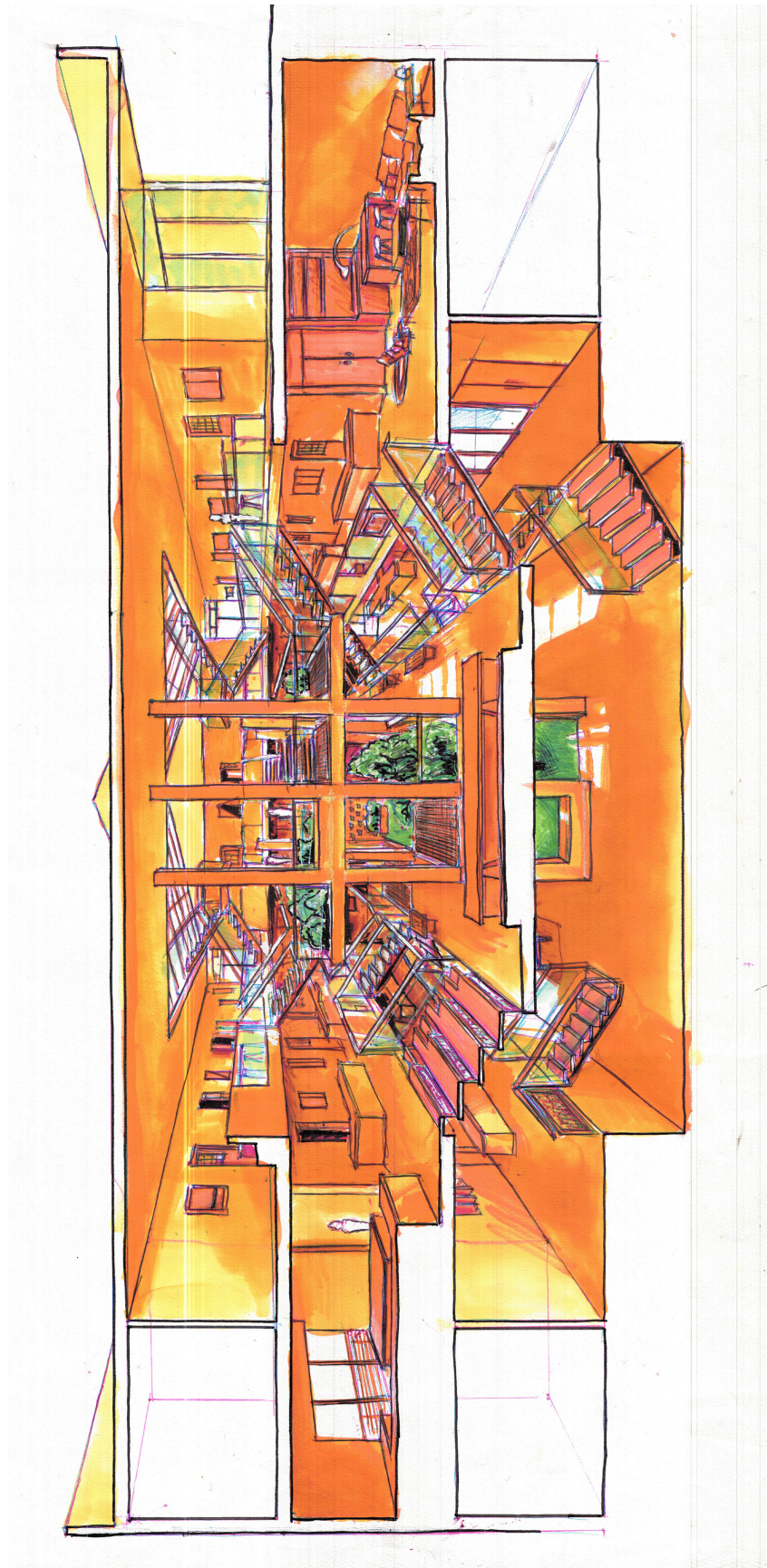
Fig. 28. Perspective section of the Hive. showing the staggered floor structure of the shared spaces.

the gap between the corridor and platforms. The effect is such that express point A to B travel gives way to a more meandering sense of the space. The inner platforms may consist of solid, green, grated, or void units, which make use of the greenhouse roof above to both bring the agricultural program of the green roof, as well as natural light, many layers down into the structure. Throughout this building are variously programmed spaces such as a larger communal kitchen.
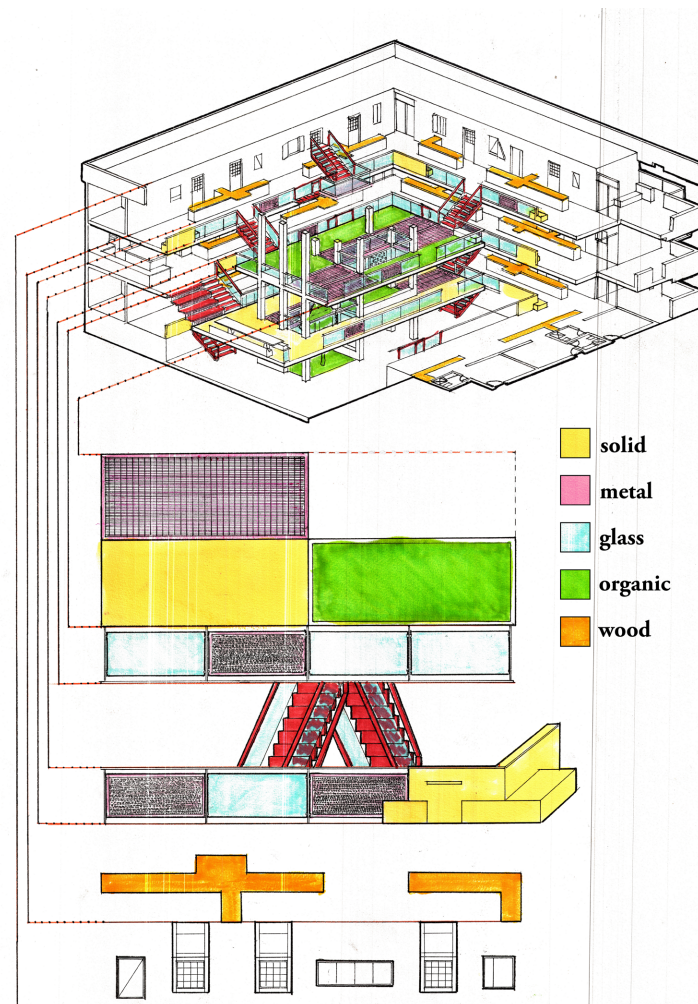

Fig. 29. Imagining the Hive as a series of bands comprising a kit of parts. The various materials ranging from solid/opaque, translucent grated/perforated metals, and transparent glass are called out in yellow, pink, and blue respectively. The green spaces, stairs and counter units are further called out as well, as devices performing a particular function in the construction of the space.
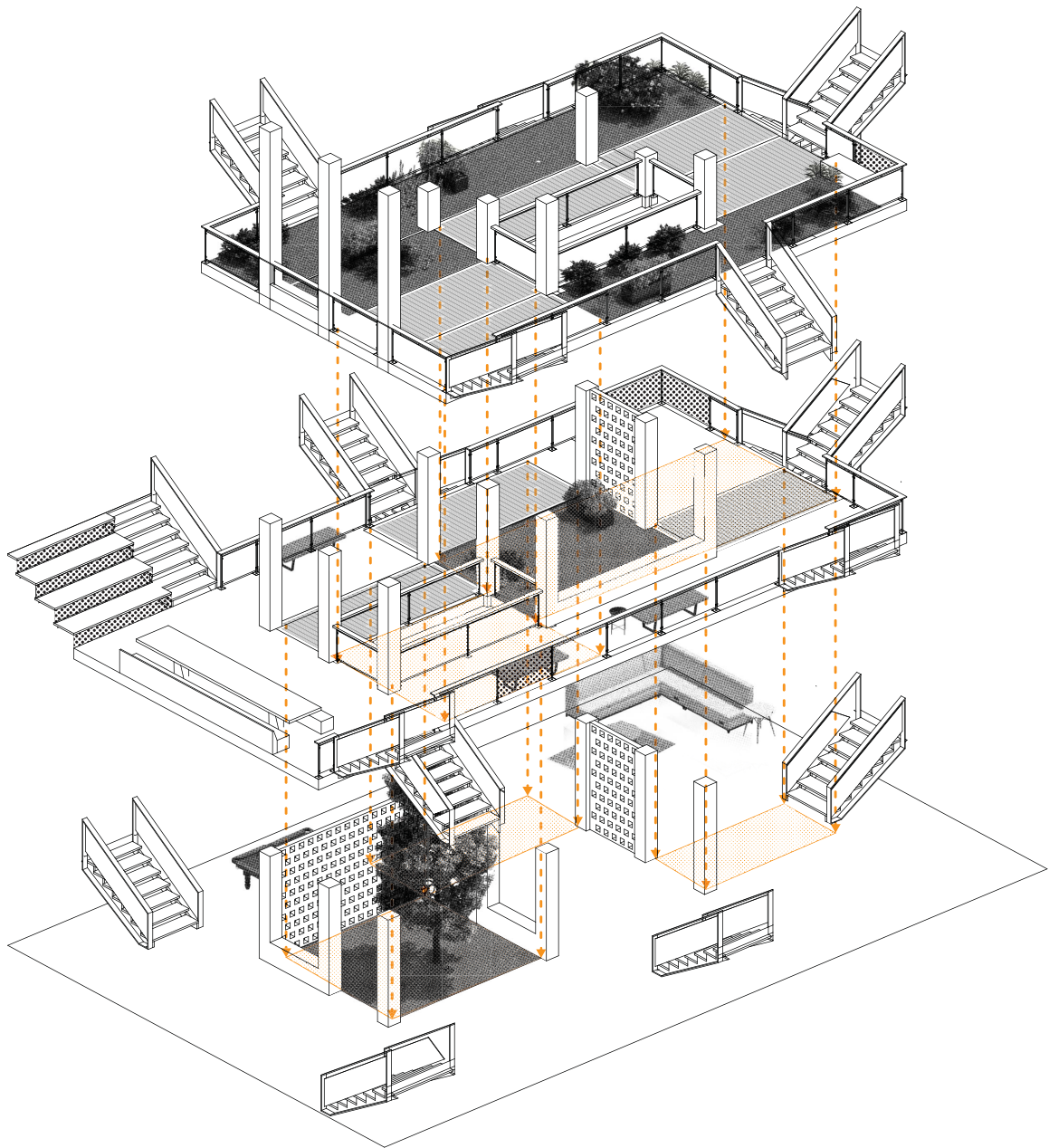
Fig. 30. Describing the stacked plates of the Hive, paying attention to the grated and void units transferring light downwards to the plates below, as well as the presence of green space spread throughout the three layers. The plates are anchored to columns which form the grid arrangement through which the different floor 'unit' types are composed, as well as the walls and benches between them. These columns extend to the ceiling in one row, and in the other two, they lie under the glass ceiling and so are cut off short at random heights, preserving the grid on the topmost floor. The orange patches and dotted lines indicate space located directly underneath a grid unit that is either void or grated metal. Secondarily, this drawing illustrates the non-uniform fashion in which the stair units join the central plates to the surrounding (not pictured) structure.
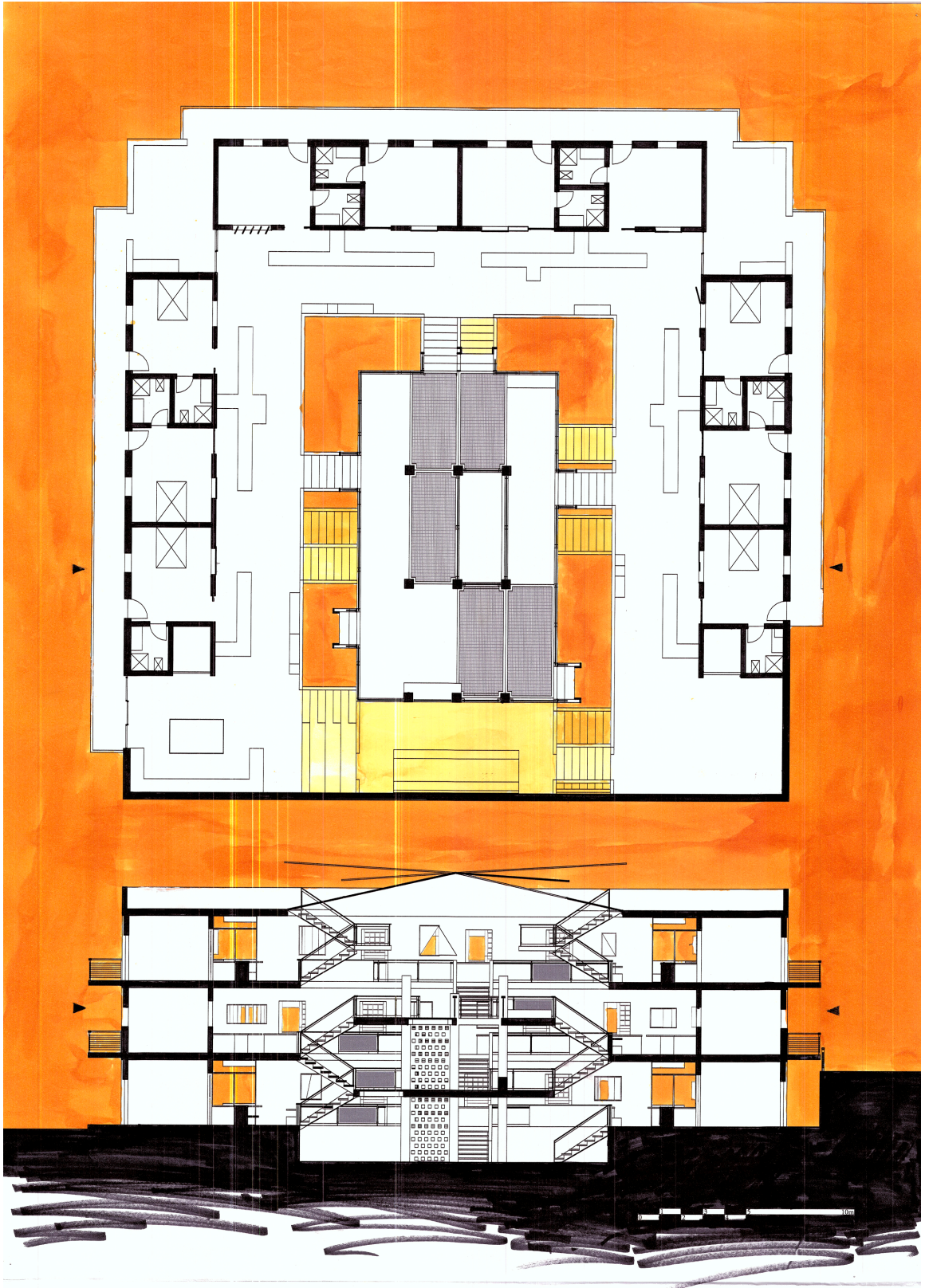
Fig. 31. Plan and section of the Hive building.

Fig. 32-33. Another pair of sightline drawings (similar to Fig. 26-27) for the Hive. The many different materials ranging from solid, transparent, and translucent as in the grated metal floors and walls introduces a great diversity to the sightlines in what would otherwise be an unnervingly exposed space.

Fig. 34. Site plan of entire project with floor plan of the Longhouse.

Green St

Queen St

Smith St

Victoria Rd

N

40m

20

10

5

0

Vernacular Precedent

While there are precedents that exist in Western and West-adjacent contexts that embody many concepts of the domestic, the principles just outlined are not represented at large scales in these societies' shared housing types. We may, however, look towards other historical and non-Western contexts for precedents that have been built and repeated at such scale to become vernacular. One such example is the longhouses unique to the indigenous people of Borneo.

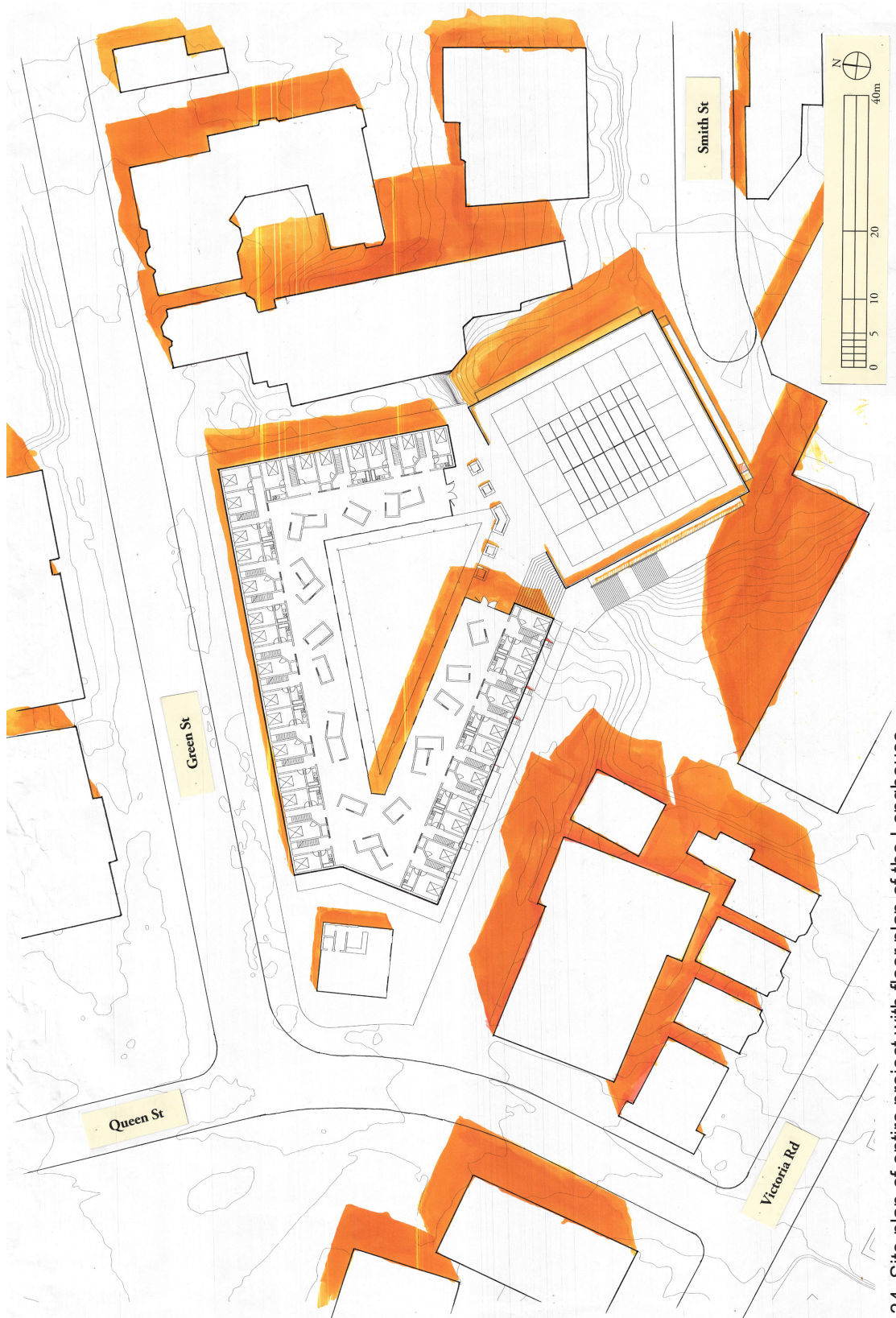This building type, whose name has been borrowed to refer to one of the design outcome's building schemes, similarly consists broadly of a long, gabled structure that has been laterally bisected. Rowhouse style apartment units that retain a degree of autonomy, consisting of sleeping quarters, kitchen and bathroom, converge onto a long, linear 'hall' that serves as a general domestic living space. What becomes notable then is that unlike many other examples which utilize shared outdoor spaces, the domestic public remains indoors, and immediately adjacent to the discrete dwelling units.This relatively simple move completely changes the experience of the house and dissolves thresholds towards the collective in a much more concise manner than a more complicated project featuring articulated facilities and descending hierarchies.

An important thing to note, not evident in the architecture itself, are the major differences between the social and cultural context of its users versus every other group being studied. The society in question is highly collectivist, to the point that it would be inaccurate to say that the discrete residential units are in practice, private. The anthropologist

Christine Helliwell, in *Inside Austronesian Houses*, states on this subject:

> It is this recognition of the individual apartment as inevitably a part of the larger community — such that it is impossible to discuss it in terms of the 'public' and 'private' realms found in our own streets of separate houses — which renders problematic any attempt to depict the Gerai longhouse either as an aggregate of separate dwellings or as a unified community. Residence in a longhouse means that one can belong to both household and community at once, or to either at different times. This is why it is possible to be alone in an apartment through the very act of not being alone. (Helliwell 2006, 59)

Another vernacular type embodying similar attitudes towards shared space are located 2500 kilometers away, across the South China Sea, the Fujian Tulou.

The Tulou are typological of the Hakka of southeastern China, and have been built and inhabited for over 800 years, with new ones being constructed well into the 20th century. Featuring often round, but sometimes square perimeters, Fujian Tulou buildings broadly consist of an immensely thick rammed earth wall, along which private residential dwellings are constructed, all facing towards a central courtyard which would contain any number of public buildings and shared facilities. Vertical slices of these radial dwellings would be occupied by individual clan/family units. These buildings were located in agricultural areas that were farmed collectively. The inward facing nature of them had to do with very real needs for protection, and they are effectively fortresses, though due the collective social organization of the communities which occupied them, they lack distinct hierarchies between the individual dwellings.

It's worth noting that both discussed types were not only highly successful vernacular types, being utilized for many hundreds of years, but also that they continue to be utilized

and occupied by their respective residents up to the present day. Longhouse and Hakka architecture is representative of a longstanding typology, and so while the potential of transposing these models to a Western context is not definitive, their success within their respective contexts is.

Chapter 4: The In-Between

The domestic public that has been intuited—coincidentally— aligns neatly with what is described by the Dutch Structuralists as the in-between.

The work of the Dutch Structuralists, primarily Herman Hertzberger and Aldo Van Eyck, demonstrates a nuanced and sensitive intelligence towards shared space, through the idea of the in-between. Not explicitly applied to domestic and residential design, though not exclusive from it, Hertzberger places the in-between as an intermediary to soften the "sharp division between areas with territorial claims". He explains these contrary 'territorial claims' as the public and private domain, though he doesn't view 'public' and 'private' in a binary fashion, rather each are relative. As an example he describes a school, in which the communal hall is public relative to the classroom, which is private, although relative to the street which is public, the hall becomes private (Hertzberger 2005, 32). Territory thus, for him, becomes a matter of a particular expectation or right to inhabit a space, which may be limited or expansive in the number of users. This is in line with the sequence of threshold spaces described earlier.

Hertzberger's in-between then, in practice, can be imagined as the conversion of the circulatory paths of a building to a space more akin to an indoor street, the street being imagined as a site of rich socialization.

A less prolific writer in comparison to Hertzberger, Van Eyck shared Hertzberger's attitudes, and his work embodies this. One such building, the Amsterdam orphanage designed in 1955, applies these principles to a domestic project.
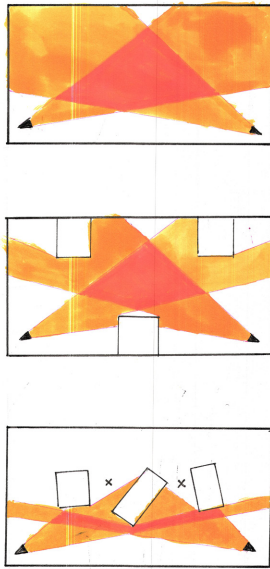
Fig. 35. Interruption of circulatory routes by meandering corners and built objects can manage exposure. Orange shows space visible to one of the two 'eyes' in the corners, red shows overlapping exposure, visible to both. In the topmost drawing, there are no built objects in this space. In the middle, built objects are place along the edges of the space. In the bottom image, these objects are placed in the middle of the space, creating the most visual interruption, where 'x' marks less exposed zones.

The building is composed as a network of modules, and courtyards, strung together by way of the indoor streets, which vary in width and having changes in elevation and lighting throughout, and populated with built-in forms to permit habitation such as seating. The modules, rectilinear themselves, are offset from another, as such the indoor street takes on a more serpentine form, slithering around corners to deny any singular, visual straight shot down of the would-be corridor. Chamfers within these corners open the spaces, creating space for circulation to pool and linger.

The courtyards are purposely spread throughout the plan rather than as a larger, singular and centralized hub, a non-hierarchical design decision that, alongside the indoor street, keeps all the spaces at a human scale and creates visual and experiential diversity, as well as working to mitigate a sensation of anxiety or vulnerability that may result from feeling physically exposed. The effect is such that Van Eyck has created "both a house and a city, a city-like house and a house-like city."(Eyck and Ligtelijn 1999, 88)

Parallels can certainly be drawn between these aspects of Van Eyck's indoor street and the domestic public of the Longhouse scheme of the design outcome with its non-uniform negative spaces. While the principles of the in-between are satisfactory as a domestic public, the fundamentals buried within it may be more fully understood by interrogating the thread of 'territorial claims'.

Chapter 5: Territoriality and Space

Recent works in territoriology have brought the concept to the world of architecture, but its historical basis is spread across a number of fields or research. To Andrea Brighenti and Mattias Karrholm—whose 2020 work Animated Lands serves as the primary source on territoriology in this instance, as well as earlier work by Karrholm in particular—the proper development of a territoriology relating to architecture draws from many usually separate fields (Mubi Brighenti and Kärrholm 2020, 17).

Concisely, territory is something that is constructed in the imagination, which is not to say that it doesn't exist. The boundaries and objects that delineate spaces and inform territory certainly are concrete, but if unoccupied, no territory can be said to be present. It is the engagement with the physical world by actors which give life to territory and assign meaning. It is ultimately something that is social in nature, taking form by the ways people and groups behave and interact.

Karrholm, in a 2004 dissertation, refers to a particular bench in Lund, Sweden, as being territorialized by smokers, becoming a 'smoker's bench' (Kärrholm 2004, 73). Once the territory becomes established, it becomes a site which implies a particular use. Materially, the bench is identical in construction to other benches in the area, it does not behave in space any differently. It's the use and occupation by individuals performing certain activities in its space that defines its territory. At the same time, the bench is a necessary component, without its presence the space surely wouldn't be territorialized in the same manner. This is consistent with the core concepts of actor-network theory, that territory is

at once a spatial actant and something which may be acted upon. In *Animated Lands*, Karrholm and Brighenti speak directly on the subject of domestic territories:

> Home is a frequented territory; it is appropriated, incorporated, and in the end produced as a singularized unity and a nonexchangeable place. Yet it also borrows its strength and stability from territorial associations to other homes as well as appropriations made by other parts of the family (home comrades), neighbors, friends, and so on. In a sense a home is always a complex territorial conglomerate, and although it is co- constituted by and with the world outside of the home (Steinbock 1995, 182), liminal borders and zones between home and nonhome do not just surround the home but are written all over the territorial conglomerate. (Mubi Brighenti & Kärrholm 2020, 115)

This idea of territory as something which is more abstract than defined space is in line with David Leatherbarrow who, while not referring to it as territory per se, distinguishes between spaces and spatiality. What he refers to as spaces are the concrete and factual, the literal negative volume that is constructed from our built systems and is measured in scientific and mathematical units. Spatiality, on the other hand, "points not to the phenomena themselves but to one's experience and sense of them" (Leatherbarrow 2009, 243).

Territoriality can serve further as an explanatory vehicle to substantiate the domestic public. As an imagined thing, dependent on social relations to exist, the concrete boundaries which delineate a space do not intrinsically comprise a territory until they are inhabited. The objective then, of a domestic public, is to territorialize the shared spaces of the building in such a way that they embody the same meaning and social intuitions as the private quarters, that is to say, they are experienced and understood to be part of a continuous domestic environment, or home.

While the in-between accomplishes this, a limiting feature is the in-between's implied location, quite literally between
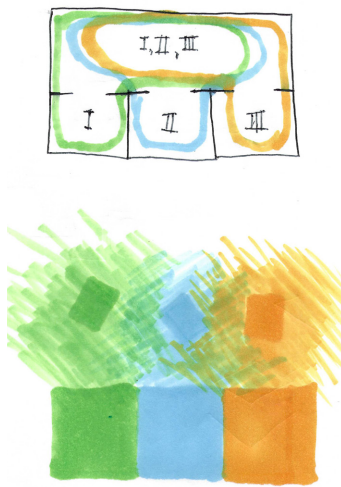

Fig. 36. Territory is simply the meaning acquired by space through social relations. They can be singular, collective, discrete or overlapping. They can be framed quite tightly by built systems or blur at their edges, extending beyond concrete markers and features.

the two public and private extremes of a given threshold sequence. This is logical given that it was imagined to smooth territorial claims between public and private, but it is not strictly necessary for the purpose of a domestic public, and may in fact be suboptimal towards those ends. This is subverted in the project through the use of through units which disrupts the sequence of threshold spaces such that the domestic public doesn't merely become a 'less than private' space situated between public and private realms. In this sense the domestic public is treated rather more like the communal courtyard of Yamamoto's Hotakubo project than the 'indoor streets' described by Hertzberger. Yamamoto was deliberate in the design of the outdoor space as the terminus of the threshold sequence, and was discussed earlier as enhancing the sensation of exclusivity.

Territories can in fact be quite featureless, as simple as four soccer balls forming an approximate rectangle to designate the field of play for an impromptu game. It has to do most broadly with the idea of 'knowing where you are', 'what is this place for', 'what do people do here'. In many ways it's concerned with the concept of place as much as space. Part of the decision to move the kitchen into the public space was motivated by territorial ideas. Of the experiential expressions of 'home', I'd describe the two most powerful as being those spaces reserved for sleeping, and the preparation and consumption of food. The kitchen as a device struggles to disentangle itself from the domestic, and so the act of physically separating it from the private dwelling does not diminish that power, rather it serves to engage the surrounding territory, the shared space, with that domestic association.

With respect to the design outcome, we might put the domestic public into territorial terms along a couple different lines. On the one hand, there is the 'right' to inhabit the entirety of the shared space (Fig. 37), though there is perhaps an expectation of custodial responsibility that remains concentrated around the region containing one's dwelling and kitchen, in this space you have not just the right to inhabit, walk around in, pass through, but also lay down markers of that occupation, furniture, decorations, configure the space according to one's preferences (Fig. 38). The edges of this zone are undefined and overlap with adjacent zones (Fig. 39), creating uncertainty, though as this is an exercise in sharing space, I'm inclined to believe that disputes ought to be resolved through negotiation and a shared interest in maintaining social harmonies.

I would identify the chief difference between the Hive and the Longhouse as the Hive's shared space space as being a more homogeneously owned thing, lacking meaningful space that falls under the custodial purview of individual residents, and what space is present overlaps to a less radical degree than in the Longhouse (Fig. 40). The counter spaces approximately fit this description, but certainly present less opportunity for individual spatial interventions in the same way that the domestic public of the longhouse does.
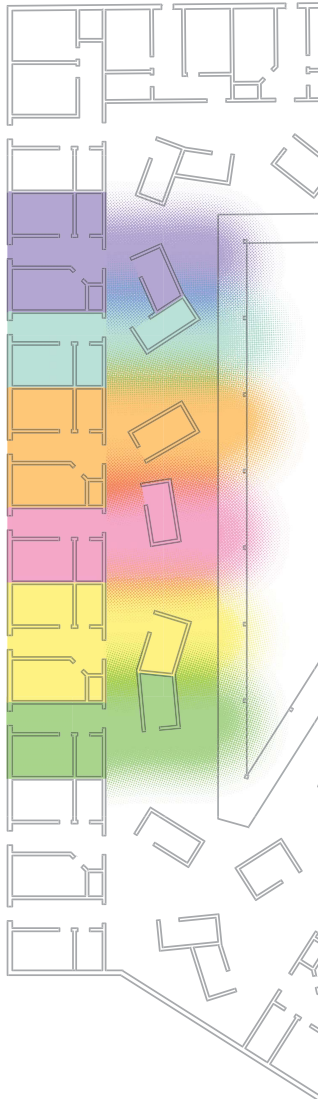
Fig. 39. Overlapping territories of 'responsibility', an extension of Fig. 38 showing multiple units in different colours.
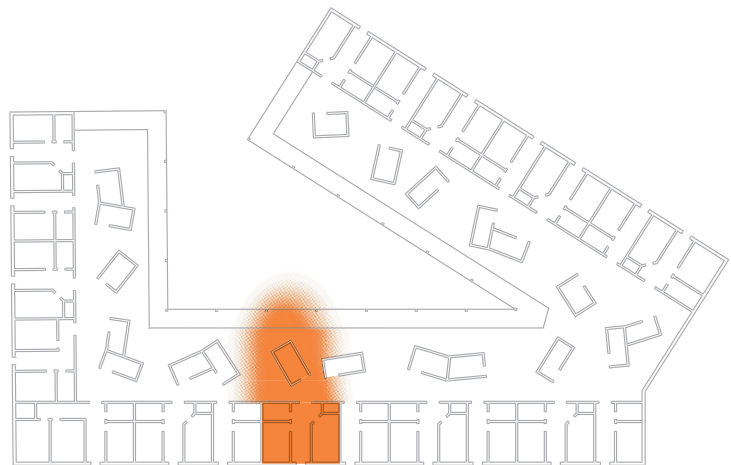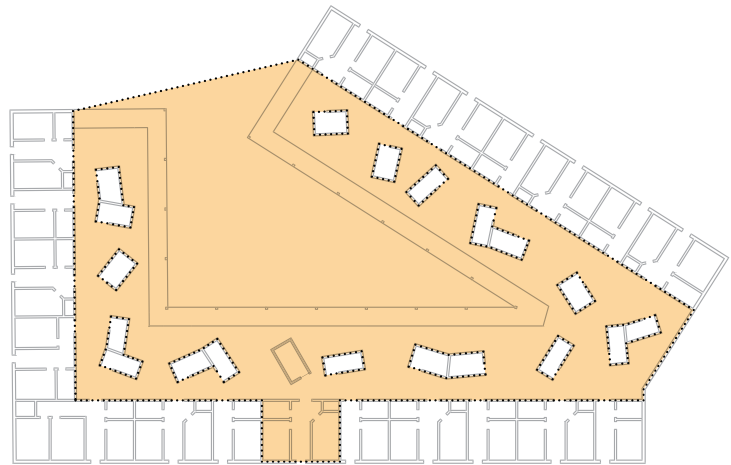
Fig. 37-38. Right vs responsibility within the Longhouse, using a single unit as an example. Surely they have the right to occupy the total space in the above diagram shown in pale yellow, though the blurrier orange region below identifies space where the resident might have a greater degree of control within the shared space.
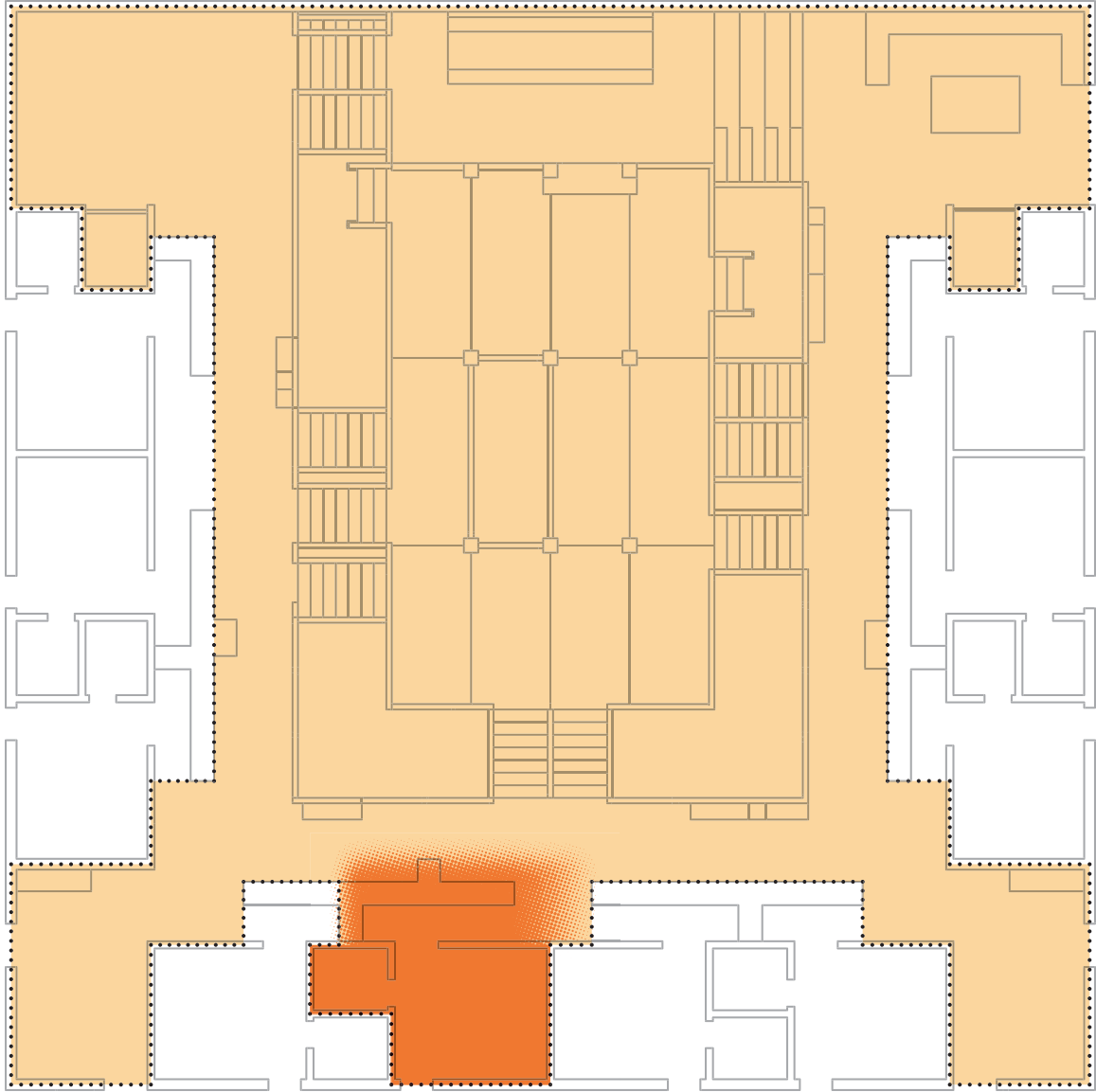
Fig. 40. Right vs responsibility within the Hive, using the same language as Fig. 37-38, overlayed onto a single image. The only real overlapping custodial territory in this scheme is around the counters, where the resident would share the small piece of counter with the neighbour to the left, and share the 'entry' to behind the counter with the neighbour to the right.

Chapter 6: Conclusion

To summarize, at the root of shared space is the idea of territoriality as a theoretical concept dependent on both social relations and the spaces they take place within, acting and being acted by one another. This is explicitly stated by Hertzberger invoking 'territorial claims', and implicitly in picking apart what his in-between does and how it functions. It is also readily apparent in interrogating the ways that territory is expressed through sequences of thresholds and the nature of boundaries and apertures in built forms. The thesis design outcome utilizes these concepts to form the domestic public as a particular type of territory to be implemented in shared spaces to bring the experiential qualities of home outside of the explicitly private realm to inform a greater collective attitude towards space.

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