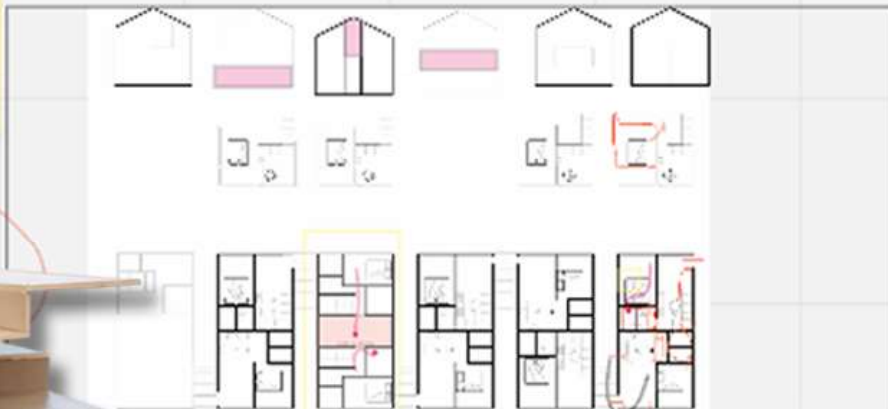


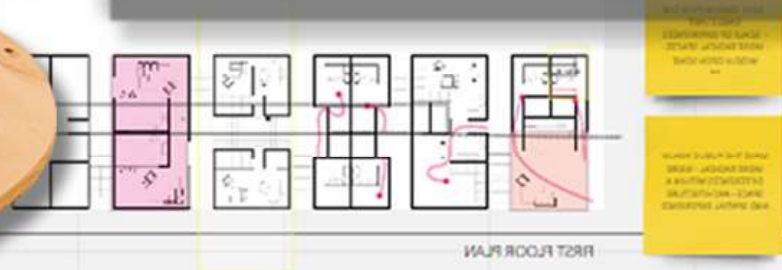
2021 ACSA HOUSING AWARD
Award Submission

Stefan Gruber
Associate Professor of Architecture
and Urban Design
School of Architecture
Carnegie Mellon University



COOPERATIVE HOUSING FOR THE 2000-WATT SOCIETY

Neighborhoods as Commons



Go Haszews

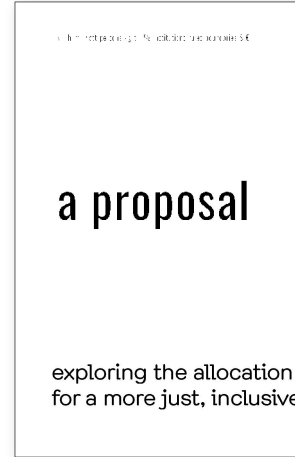




THE BED



challenging the binaries of private and public space and the modernist separation of work and living.



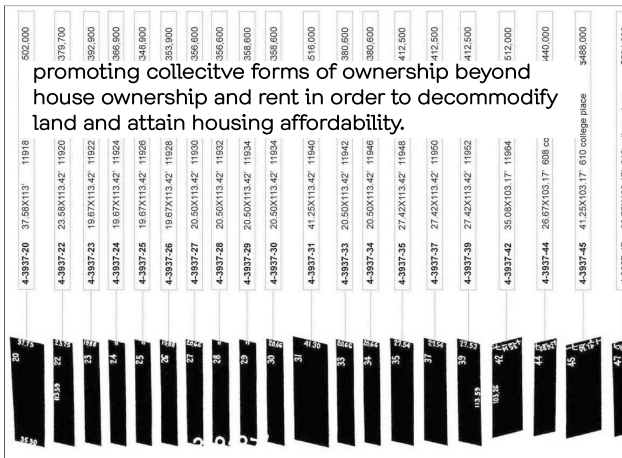
exploring the allocation and stewardship of resources for a more just, inclusive and sustainable future.



THE KITCHEN



rethinking domestic and social reproductive labor based on gender division and the heteronormative nuclear family.



THE LAND



studio influences

COOPERATIVE HOUSING FOR THE 2000-WATT SOCIETY

Neighborhoods as Commons

Our current lifestyle transcends planetary boundaries. Yet the world population is projected to grow to 10 billion people by 2060. Sustaining their lives will require us to radically rethink how we live, how we share resources, what we produce and consume, and how we care for our individual, community and planetary wellbeing. Cooperative Housing for the 2000-Watt Society explores how to tackle these challenges while designing more equitable, inclusive, sustainable and resilient communities. The studio aims at rethinking neighborhoods as commons, starting a point zero: the land, the bed and the kitchen.

The studio takes “a proposal” by Hans Widmer and the 2000-Watt society as its starting point. In the 2000-Watt society each earthling is allotted a primary energy budget of 2 kWh. This entails our individual and shared energy for housing, mobility, food, goods and waste, including embodied energy. Based on principles of participatory and democratic governance, “a proposal” lays out what such a lifestyle would entail: 20 m² of private living space, 2.5 m² of communal space, no cars, no flights, 6 km by train per person/day, 15 kg of meat per year, 70 l water per day, etc. While these constraints seem extreme, they are not far-fetched: as recently as the 1960s, most countries in the Global North achieved these numbers. More recently, the Covid-19 pandemic has

constrained our lives to a much more local footprint and reduced our energy consumption accordingly. But while the pandemic changed our habits overnight, our habitats still await redesign. Beyond pure metrics, “a proposal” prompts us to reconsider how we share, access and govern resources and design new typologies of collective living.

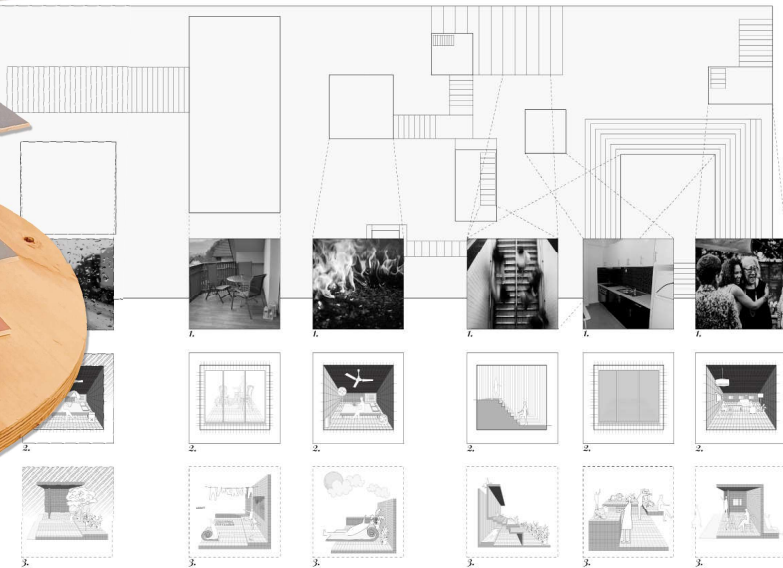
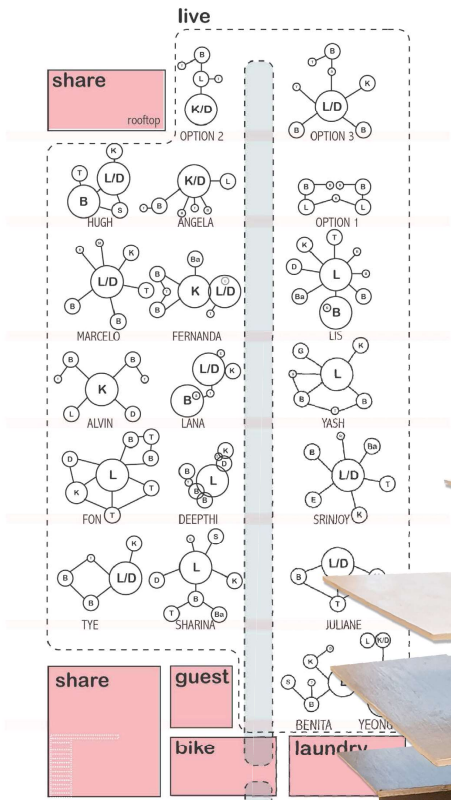
This studio tests the implications of the 2000-Watts society for Pittsburgh by envisioning new typologies of collective living and working. More specifically it explores the possibility of limited equity housing cooperatives in Polish Hill as a way to provide affordable housing beyond the binaries of home ownership or renting. By means of pooling resources and collective governance, neighborhood communities can achieve more local, self-sufficient and circular economies. Thus at an urban scale, housing coops can contribute to reframing neighborhoods as commons.

The studio approached the design by reflecting on three essential elements of the home: the land, the bed and the kitchen. The land raises question about ownership, the commodification and affordability of housing. The bed is no longer a place of intimate privacy, but the site of everyday activities including work and public communication. Thus the bed points towards the contemporary crisis of imagination in architecture that linger in a binary thinking of public and private

space. Meanwhile, the kitchen addresses questions of housework, labor of care and the gendered politics of domesticity. The kitchen leads us to challenge the normativity of the nuclear family and acknowledge the diverse set of social constellations that constitute a home. Along with the study of selected typological precedents and a careful reading of the urban milieu, these elements prompted students to reconsider “the trap of the American dream” (Mike Davis) and explore alternative forms of collective housing.

Then students tested the implications of the 2000-Watts society for Pittsburgh by envisioning new typologies of collective living and working. More specifically it explores the possibility of limited equity housing cooperatives in Polish Hill as a way to provide affordable housing beyond the binaries of home ownership or renting. By means of pooling resources and collective governance, neighborhood communities can achieve more local, self-sufficient and circular economies. Thus at an urban scale, housing coops can contribute to reframing neighborhoods as commons.

This studio claims 2000-Watt and self-governance are the Modulus of the 21st century. But while our energy budget per capita is fixed, its architectural manifestations are as diverse as the urban milieus we inhabit.



development of proto-typologies

RECIPES FOR COLLECTIVE LIVING

Yongju Kim

1:1.5 Floor Level Utilization

Underpinning 2019

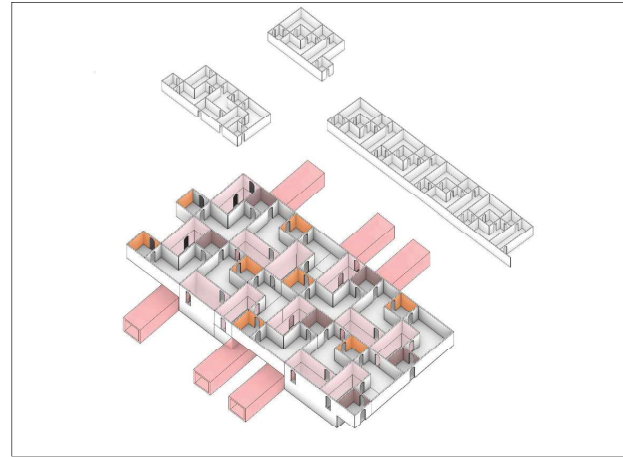
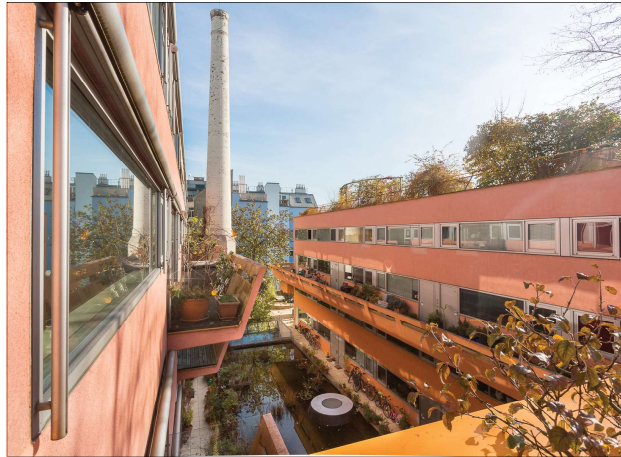
PROJECT: Oberlin 19, 56
 LOCATION: Berlin, Germany
 YEAR OF COMPLETION: 2019
 ARCHITECT: SRAA Architecture

N° OF RESIDENTS: 15
 SQF PER RESIDENT: 122.1 - 137.8
 OWNERSHIP: 50% Owner Occupied
 50% Rental

ABSTRACT: On a small plot of land of 771 sqm, the building maximizes the spatial advantage for communal units, studios, and apartments. What is not high, it is wide. By regularly averaging out of space in Berlin. Such studio and apartment units can be divided into smaller units because there are access from every half landing to each unit. For example, the illustrated residential unit A can be used as a house for a nuclear family, a two-man independent studio and work room. This unit can be divided into various ways in which the divided units can be used as an office, a one-bedroom apartment, and a studio apartment. The flexible arrangement of spaces allow the users to maximize the utilization of the spaces.

Unit A Variations

CC BY NC ND



RECIPES FOR COLLECTIVE LIVING

Juliane O'Day

SPATIAL PATTERN

Terrassenhaut, Berlin

PROJECT: Terrassenhaut
 LOCATION: Berlin
 YEAR OF COMPLETION: 2018
 ARCHITECT: Brandhuber, Ende, Buden, Mack, Petzet

N° OF RESIDENTS: 60
 SQF PER RESIDENT: Varies Largely
 OWNERSHIP: PRIVATE - LORE BLOCK, OLGA REINOLD

ABSTRACT: The site faces onto the suburban railway track, offering a wide view towards the south. After purchasing the former car park in Berlin, the design approach of the architects to develop the terraced building embedded in a heterogeneous neighborhood of commercial and residential blocks. The main focus of the design was preserving the exterior space, made accessible to users and the neighborhood. The depth of the units vary from 26 meters at ground level to 11 meters at the highest level. In this sense, the program of the units is aligned with the floor depth and subsequently the amount of light. The buildings envelope is built out roughly in concrete and allowed, only including central zones with elevators and bathrooms. All other additions, such as spatial separations, are made by the users themselves, according to their needs.

SEMI PRIVATE PRIVATE

CC BY NC ND

RECIPES FOR COLLECTIVE LIVING

Juliane O'Day

DESIGNING VOID

MoriYama House

PROJECT: MoriYama House
 LOCATION: Tokyo, Japan
 YEAR OF COMPLETION: 2005
 ARCHITECT: YVE NISHIZAWA

N° OF RESIDENTS: 6
 SQF PER RESIDENT: SQUARE FOOTAGE RANGES FROM 31.4-140.50 FT² (9.00-12.60) UNIT DEPENDENT ON THE UNIT CHOSEN
 TOTAL 285.50 FT²
 OWNERSHIP: 1 OWNED, 5 RENTAL

ABSTRACT: Context can be matched in more than one way. The MoriYama House does not appear to match contextually at street level. Although, when comparing the site plan to a portion of the city, we notice that the void space between these units (in its role) is public-allowable, just at a smaller scale (1).

This use of the void allows the corridor to become a public space that is not rigid in its users path. Providing an unchoreographed experience for those who choose to use the space. Providing an additional openable space to be shared with the public.

CC BY NC ND

RECIPES FOR COLLECTIVE LIVING

Fon Euchsakanonchai

COURTYARD WITH MULTIPLE VOIDS

The Six

PROJECT: The Six
 LOCATION: Manhattan Park, Los Angeles
 YEAR OF COMPLETION: 2017
 ARCHITECT: Brooker & Scarpa

N° OF RESIDENTS: 52
 SQF PER RESIDENT: 144.5
 OWNERSHIP: 50% Row Housing Trust

ABSTRACT: The central courtyard element in The Six is the housing project's main organizational element. The courtyard is created by puncturing the top, front facing the street edge, East, and the South side of the facade. With multiple voids in the facade, the courtyard is able to create a level of privacy for activity, while being connected to the street front. The sense of privacy is heightened by filling the courtyard space a lower volume than the street front. The units, surround the courtyard, with access balconies that face the central space, gathering activity. The units are studio bedrooms, demarcating the private space, in favor for the common areas. The multiple voids also allow the courtyard to perform environmentally, and reduce cooling loads. They allow reduced surface that creates cross ventilation and breeze in the central void space. The facade is embayed on top in order to minimize solar gain.

CC BY NC ND

RECIPES FOR COLLECTIVE LIVING

Sreenivas Shrivastava

MINIMUM VERTICAL, MAXIMUM SPACE

Essex House in San Diego, USA

PROJECT: Essex House
 LOCATION: San Diego, USA
 YEAR OF COMPLETION: 2009
 ARCHITECT: Paul Smith + Office/The Real Group

FF OF RESIDENTS: 35 Units, 41 Suites
 SQF PER RESIDENT: Varies
 OWNERSHIP: Row Housing Trust, The Real Group, with each suite available for sale to residents.

ABSTRACT: The units in Essex House are different, variable, and constructed of all different scale projects. The units have a lot more freedom in connecting their products. Essex House is the first row housing in the US. Having long history the building code allow them to call private units a unit instead of a suite rather than call the entire unit a house for those created about 1930s and 1940s. The units are different, but the unit is individual through the use of floor plan and construction strategy for the units. The units are called to be used in the way they are used. The housing is a parking garage on the roof and underground housing on the other side for people who don't want to use the garage. The housing is a parking garage on the roof and underground housing on the other side for people who don't want to use the garage. The housing is a parking garage on the roof and underground housing on the other side for people who don't want to use the garage. The housing is a parking garage on the roof and underground housing on the other side for people who don't want to use the garage.

CC BY NC ND



typological studies of domestic collectivities

POLISH HILL DEMOGRAPHICS

POPULATION



POPULATION DENSITY



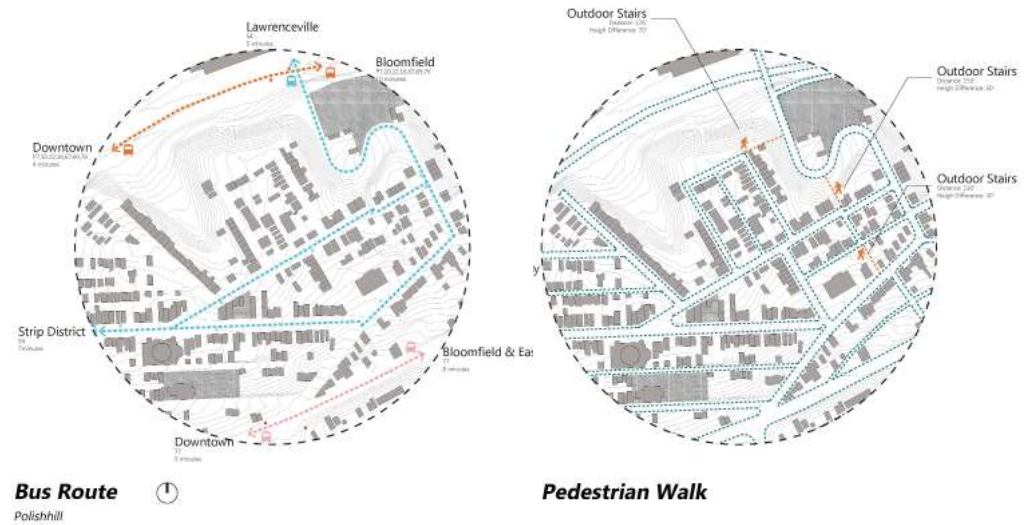
HOUSEHOLD TYPES



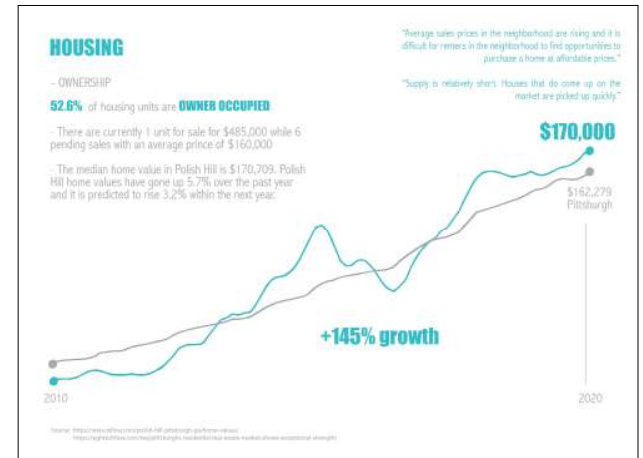
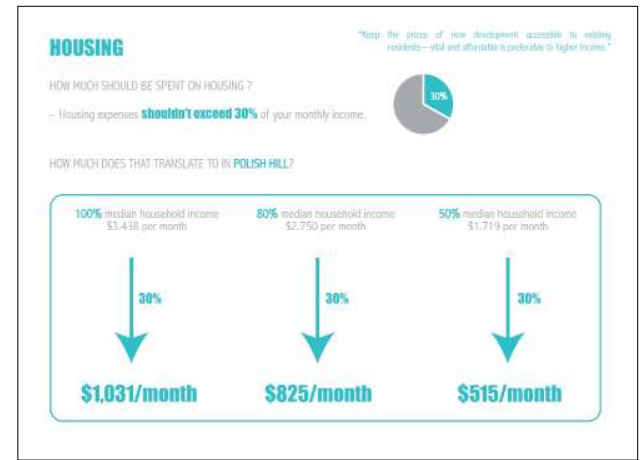
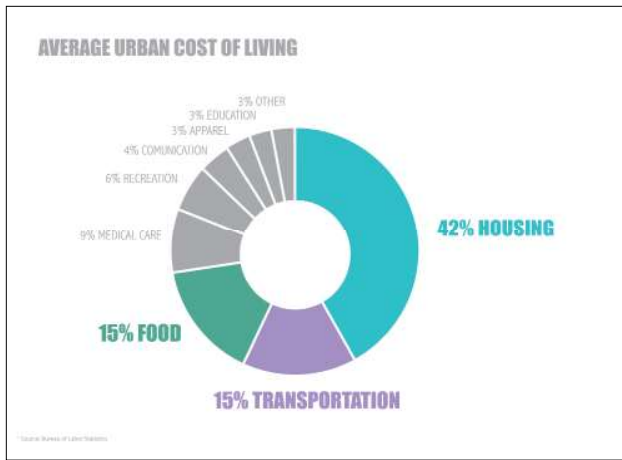
FAMILIES WITH CHILDREN



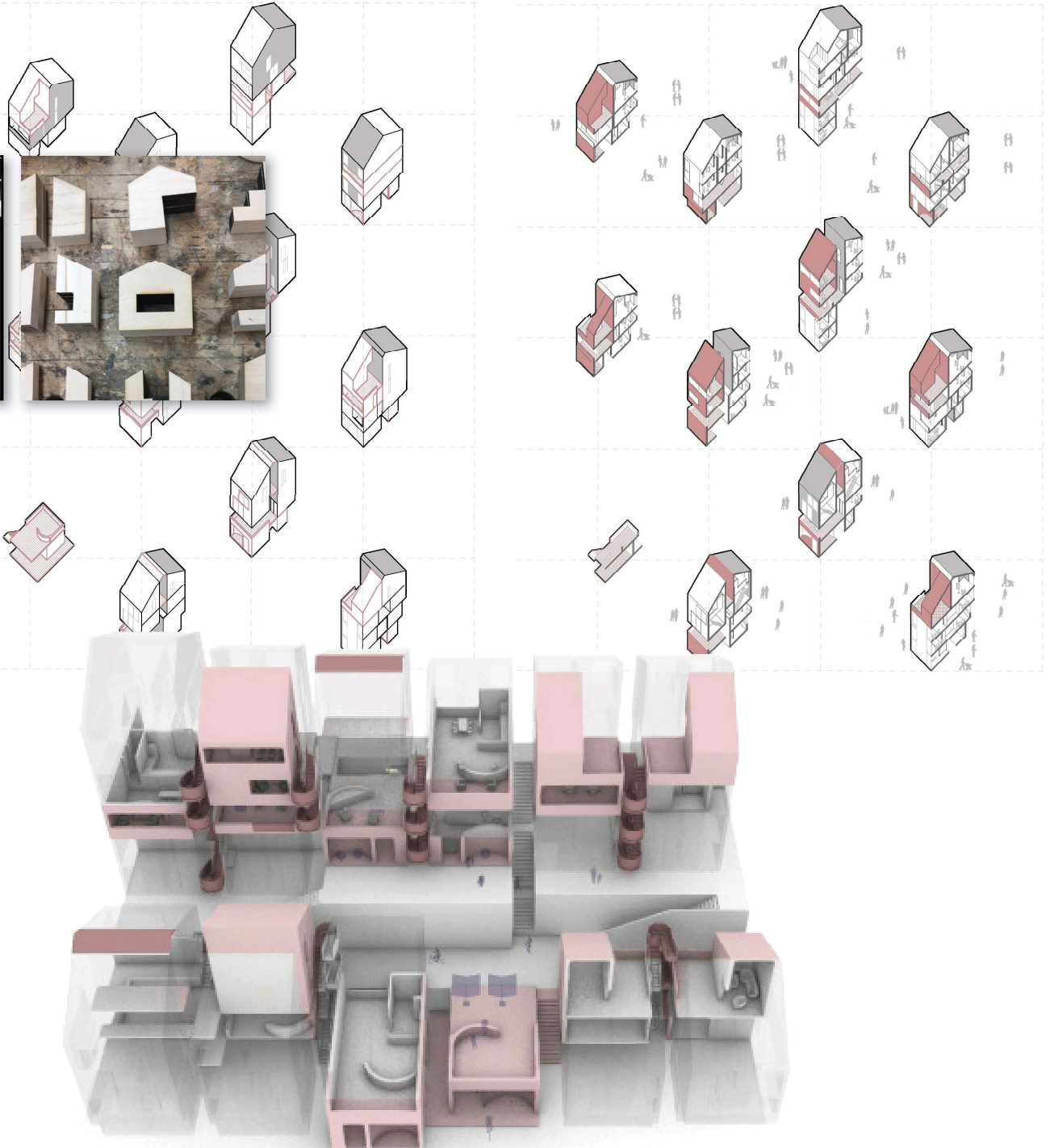
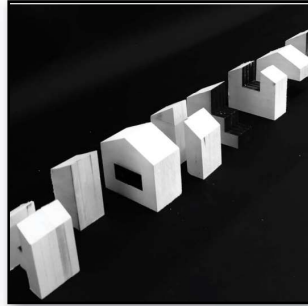
AGE



A PATTERN LANGUAGE OF POLISH HILL	SUBCULTURE BOUNDARIES <p>Polish Hill is completely bounded without any natural breaks. According to Alexander, cutting off communities allowed them to build their own characters. This combined with Polish Hill's naturally drastic topography, really helped establish the Hill's individual characters. It developed to the point that the members of the community never had to leave the Hill to get what they wanted.</p>	HOUSING CLUSTERS <p>People will not feel comfortable in their houses unless the houses form a cluster around a piece of jointly owned land. Polish Hill's topography doesn't allow for too many houses to be clustered around a large public space but there are communal courtyards between houses as shown above, and the Polish Hill stairs that run between horizontal blocks of land that can make a strong case for being jointly owned land.</p>	MAGIC OF THE CITY <p>Multiple amenities spread across areas to encourage metropolitan crossing. This was not the case for Polish Hill where the community created their own amenities for them within the boundaries of the Hill. This meant that they continued to stay within their own communities they felt comfortable around.</p>	HOUSING IN BETWEEN <p>Build houses into the fabric of shops, small industries, etc. This forces the community to engage with other members of that same community and helps build relationships while also establishing these small businesses. This allows for community lead initiatives to thrive.</p>	DEGREES OF PUBLICNESS <p>Public Spaces: Bars (Gooski's), Cafes (Calibur Cafe), Markets (Polish Store), Immaculate Heart of Mary Church, Private Spacing: Housing.</p>
--	--	---	---	---	---

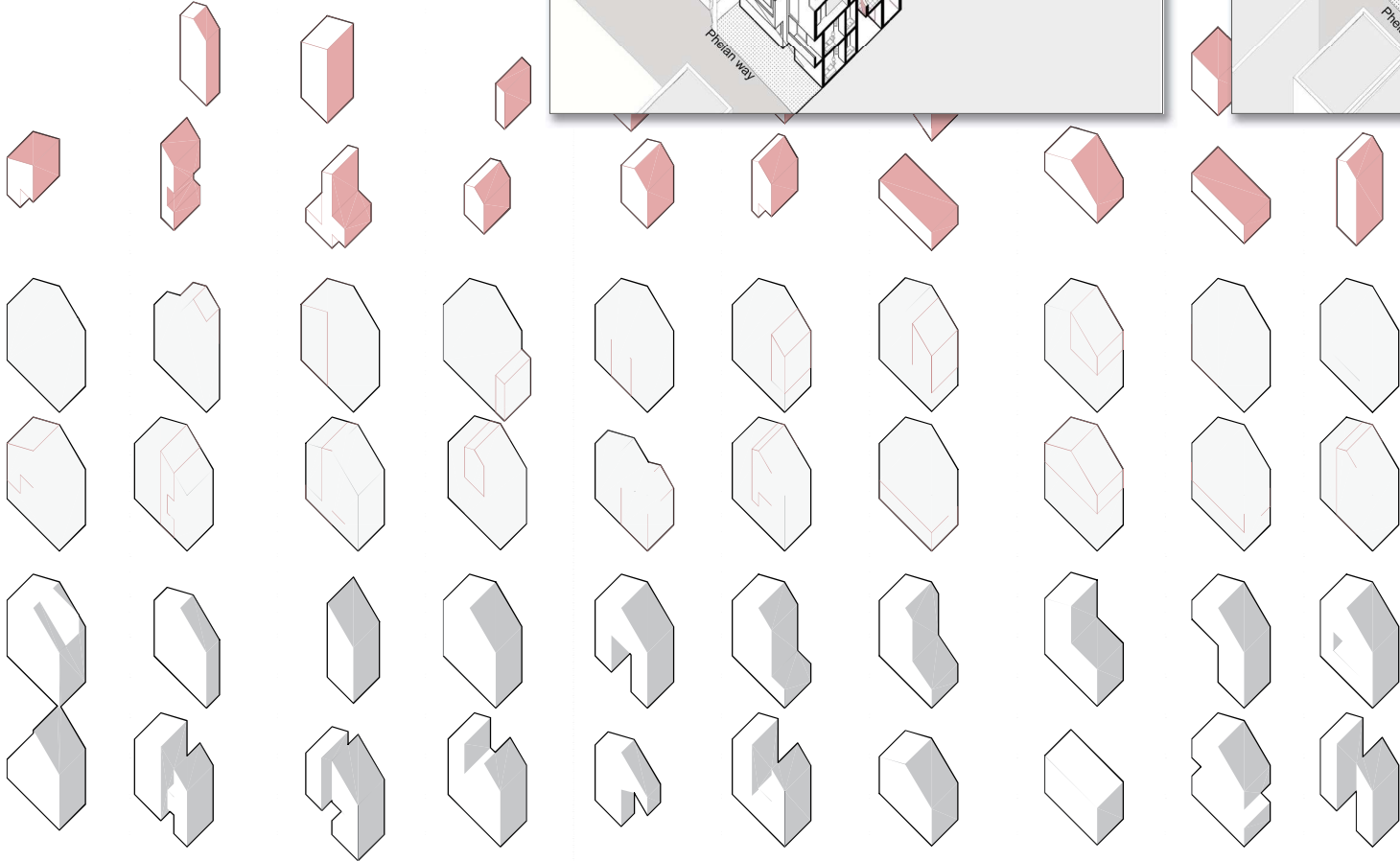
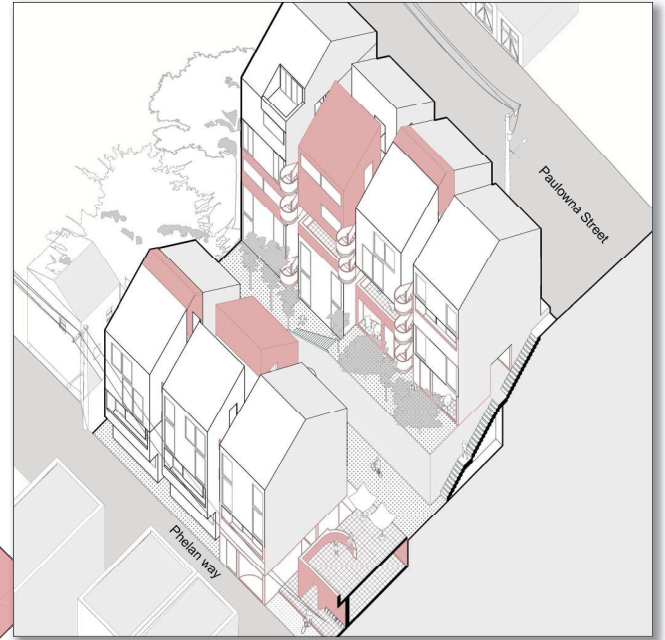


what does affordable housing mean in polish hill?

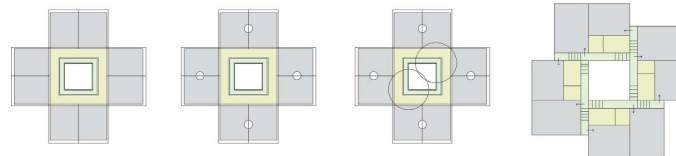


STICHTED TOGETHER BY SHARED SPACES

What appears to be a series of typical Pittsburgh row houses are stitched together by an enfilade of shared spaces. Servant spaces expand into communal facilities, inciting chance encounters and forming a connective tissue for the residents of this intentional community. Diverse dwelling types allow for different living constellation beyond the heteronormative nuclear family.

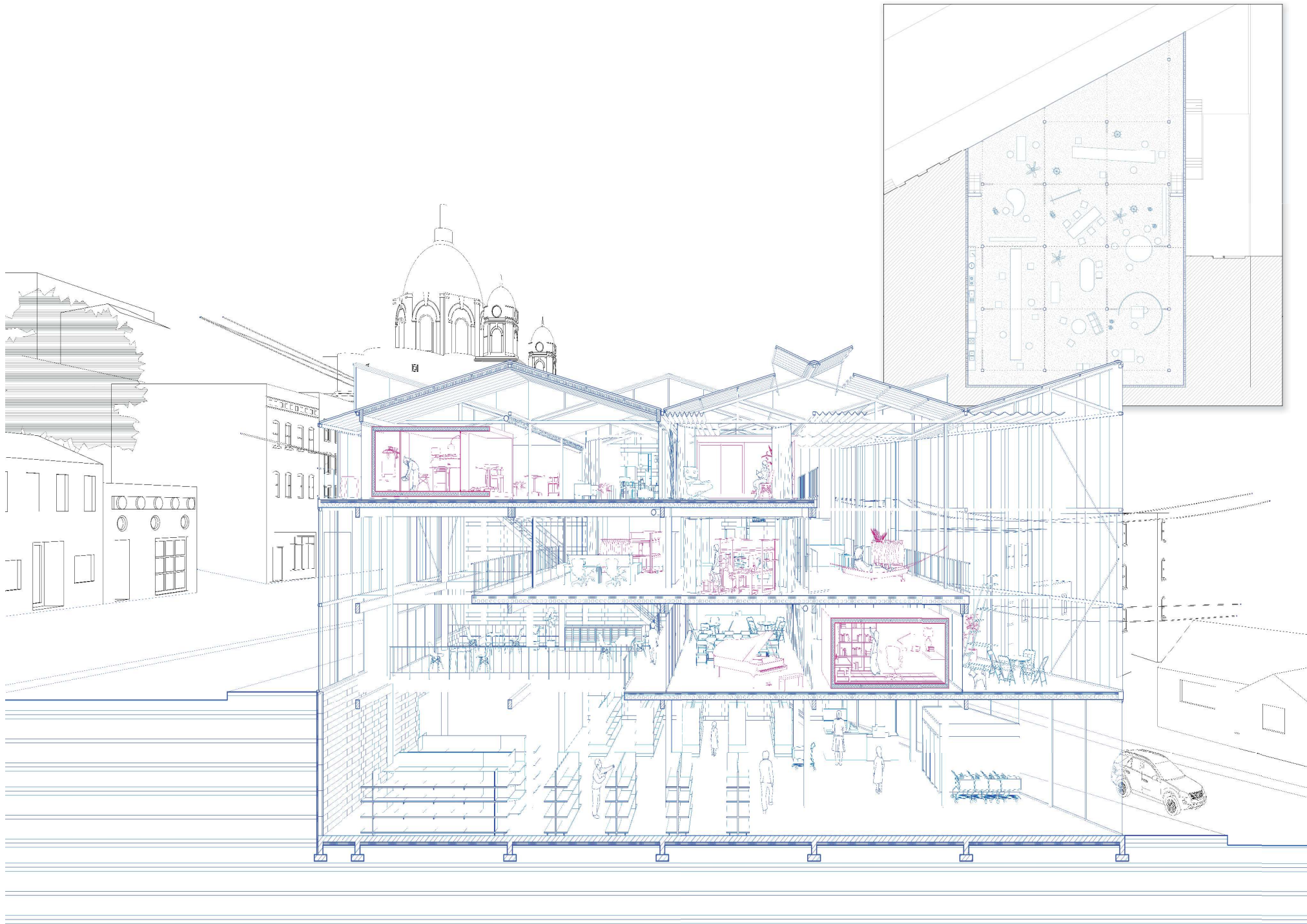


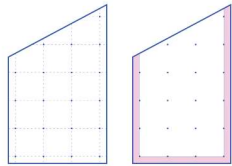
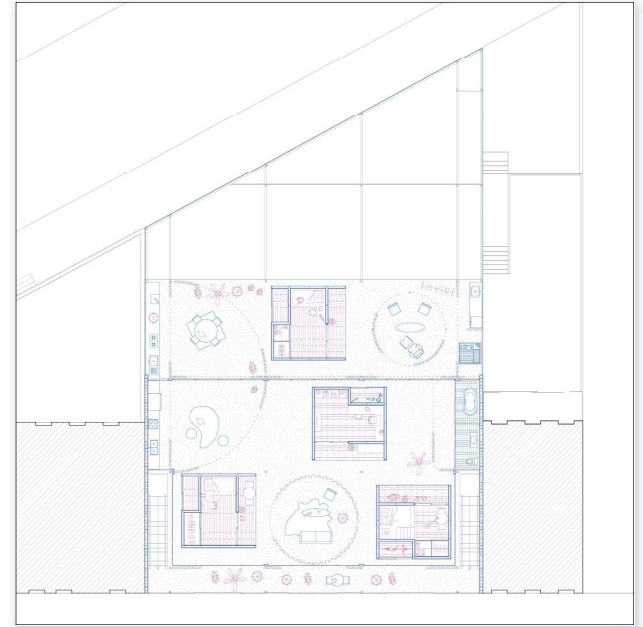
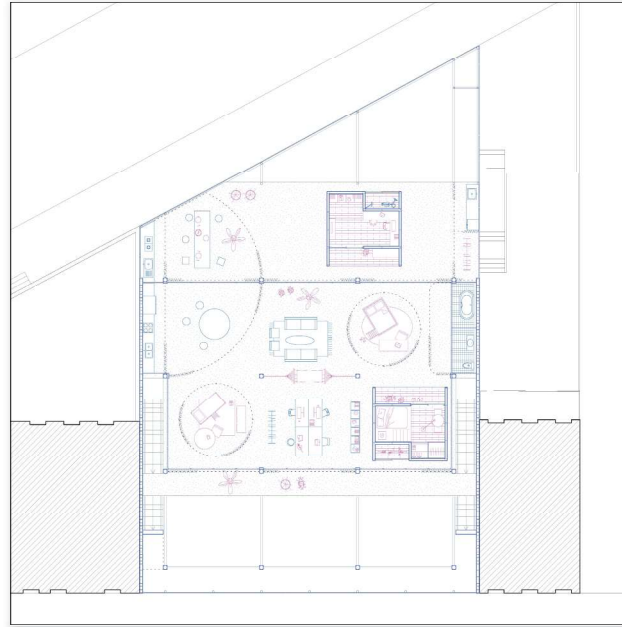
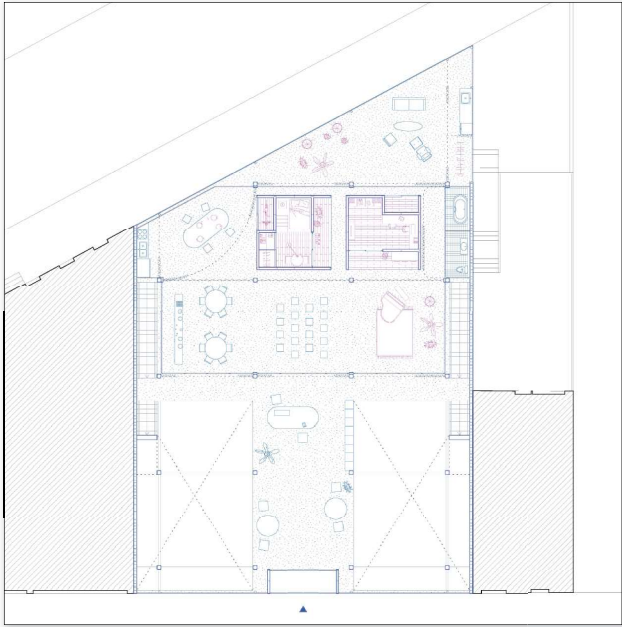




SHARING AT THE SWING OF A DOOR

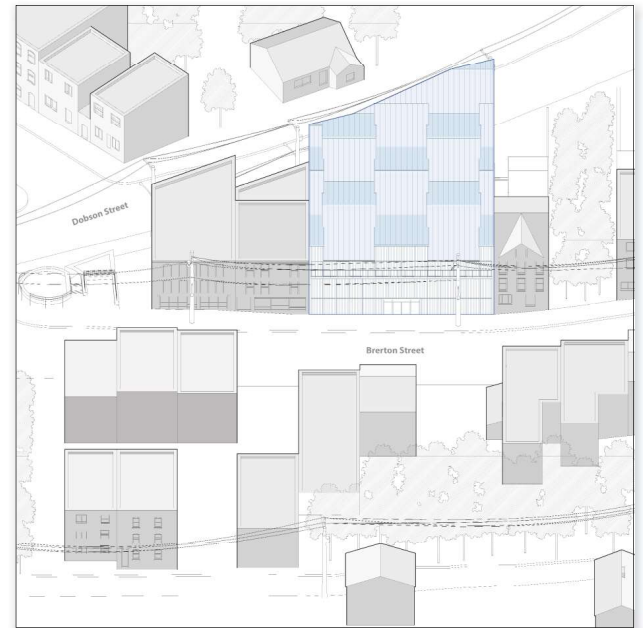
Structured around a central atrium, each dwelling opens up and can expand into the shared spaces. Similarly, the dwellings are laid out as to enable varying degrees of sharing by connecting the kitchen, bath, living room or office to one or more units. Here, cohabitation is continuously negotiated between residents. Dwellings can be connected or separated on demand. Sharing occurs at the swing of a door.

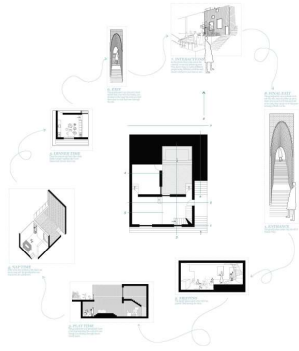




MANY SHADES OF PRIVACY

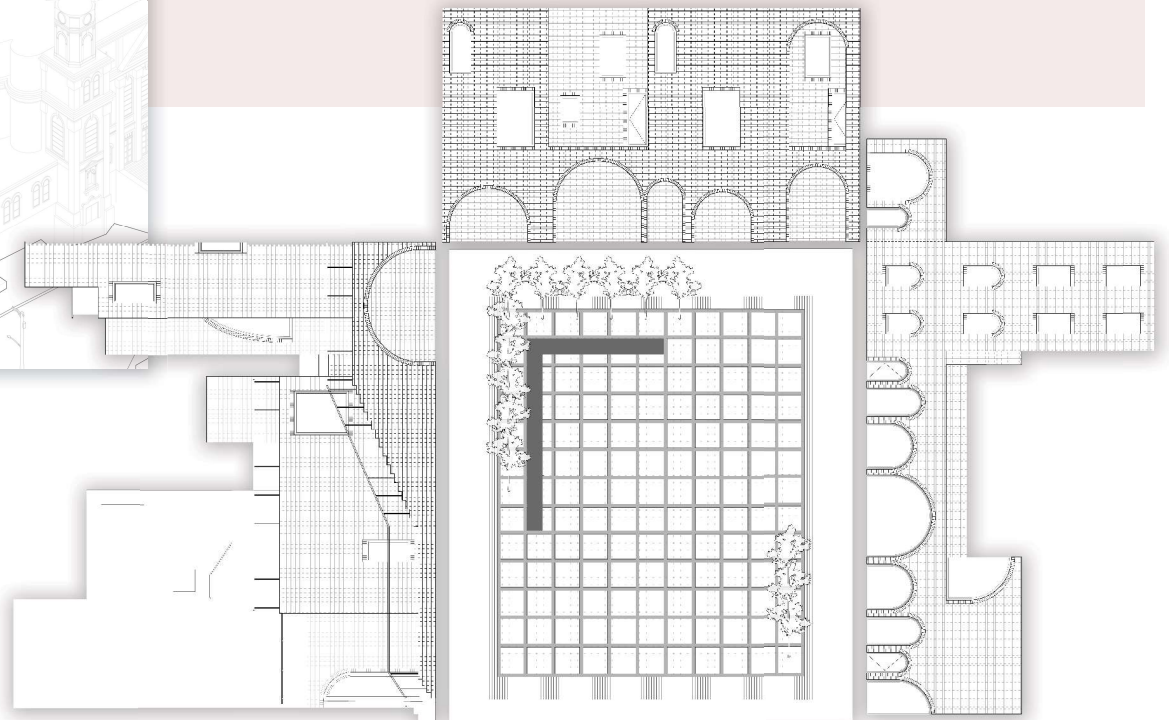
The proposed typology dissolves the dwelling unit into gradients of privacy and collective living: from the intimate cell to communal kitchens, to shared winter gardens and flex spaces that open up to the neighborhood. Their nested shells accommodate a flexible lifestyle while balancing affordability and energy performance.

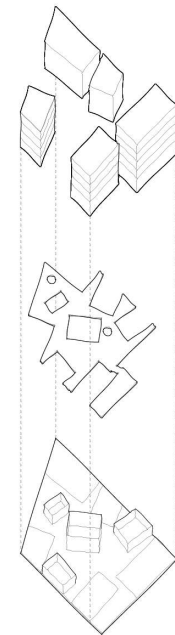
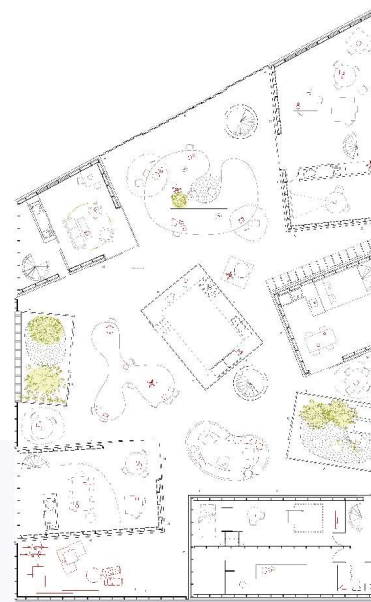
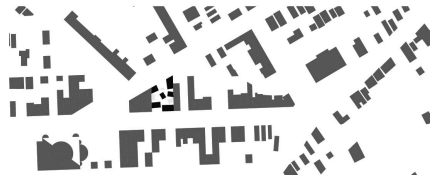




BEYOND PRIVATE OR PUBLIC SPACE

Structured around the intricate arrangement of public, common and private outdoor spaces, the cascading townhouses take full advantage of the site's dramatic topography. By blurring the boundaries between indoors and outdoors, and opening up to the neighborhood, the project aims at moving beyond the binaries of private versus public space.



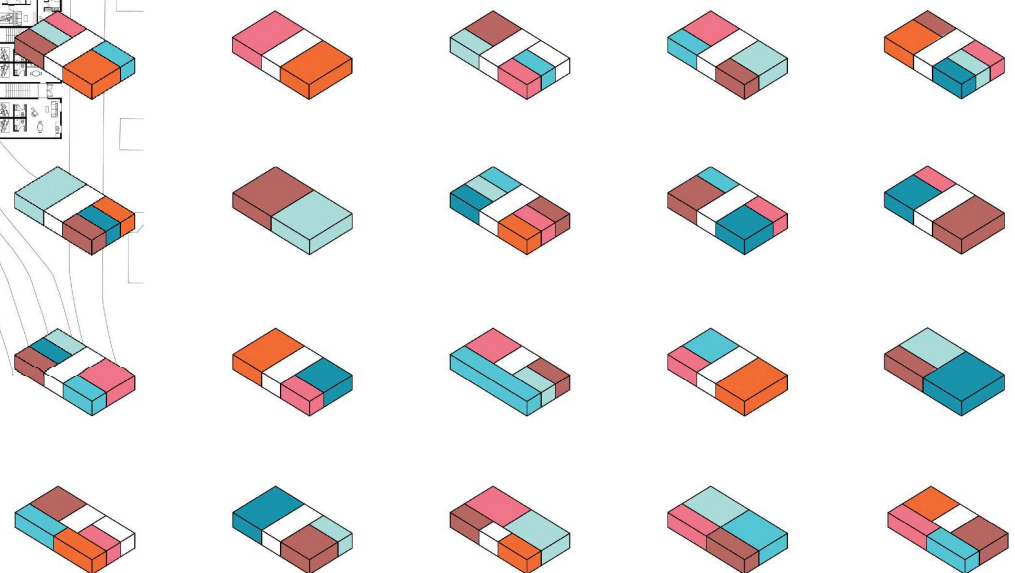
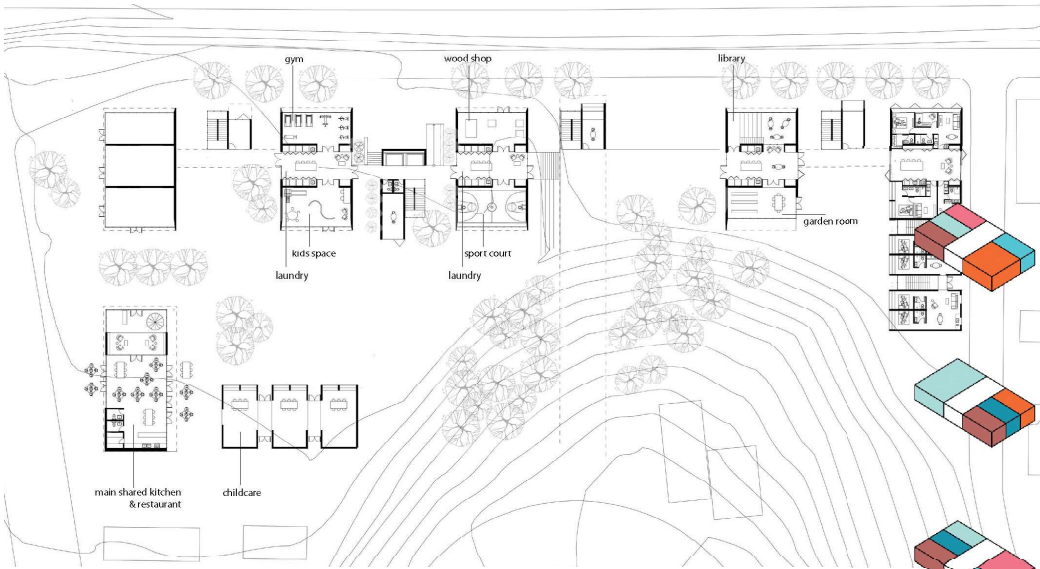
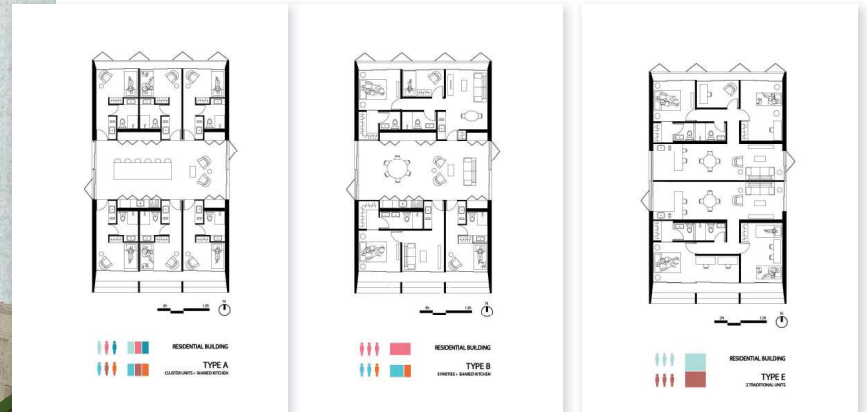


COLLECTIVE CARE AND DOMESTIC WORK

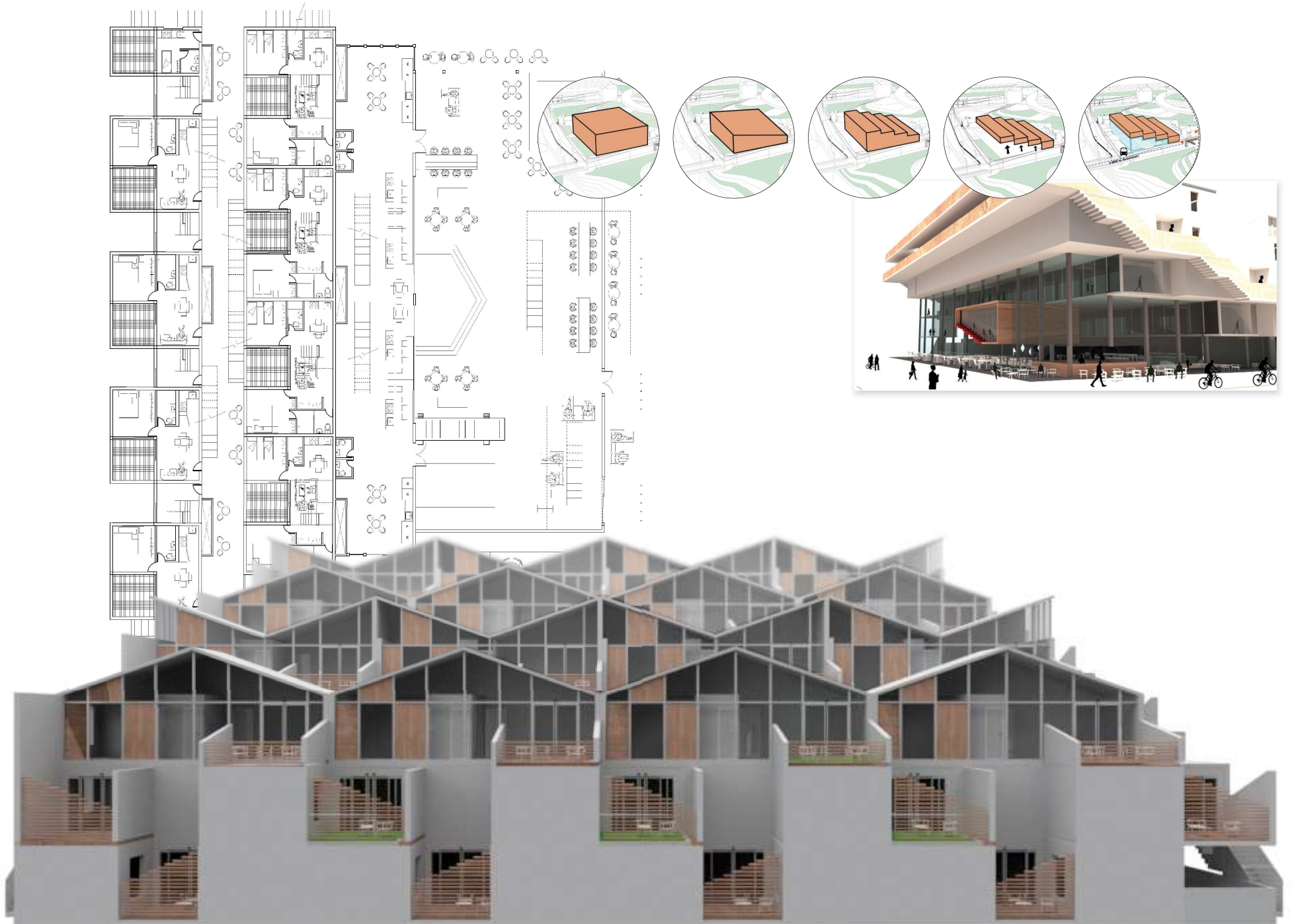
A ground-level plinth connects the minimal dwelling units and provides communal space for collective work. The project challenges the modernist separation of living and working, and enables residents to organize around the sharing of resources and domestic labor. Drawing from the Greek notion of oikos, here, productive and social reproductive work are the foundation of the household.

PROJECT 05 by Fon Euchukanonchai

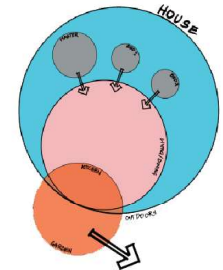
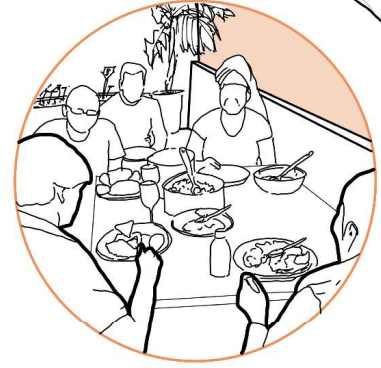
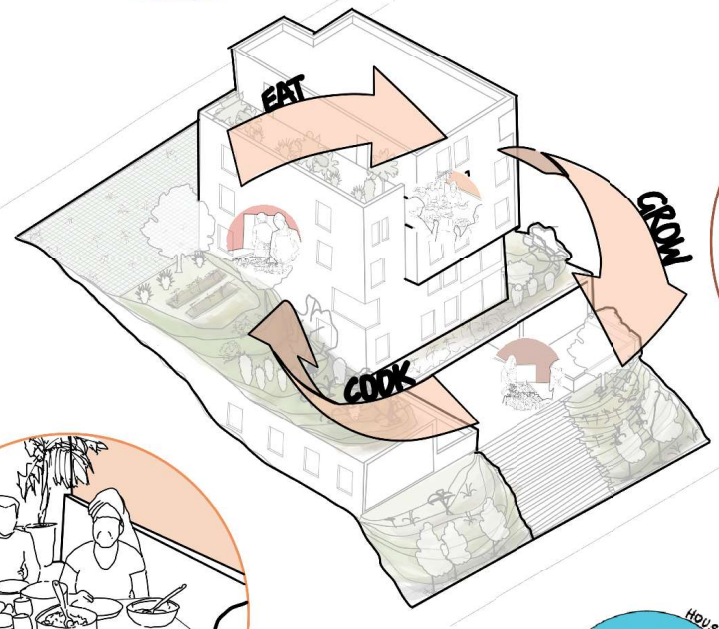




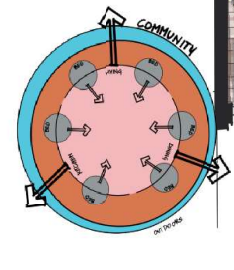
PROJECT 06 by Fernanda Mazzilli,



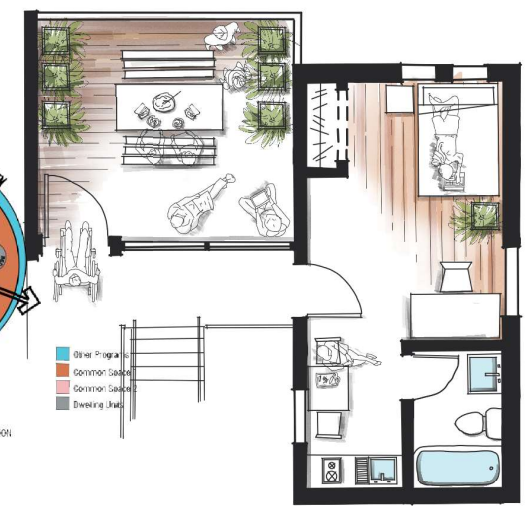
PROJECT 07 by Yashwitha Maram Reddy



A-TYPICAL HOUSING PROGRAM DISTRIBUTION



PROPOSED HOUSING PROGRAM DISTRIBUTION



Half way through the semester our lives were shaken by the tragedy of the Covid-19 pandemic. Physical distancing and stay-at-home orders not only disrupted the way we live and work, but imposed the single largest ad-hoc experiment in reorganizing our homes and cities. Thus, almost overnight, the studio went from speculating about the restructuring of housing to experiencing radical challenges to common notions of domesticity, the private and public, and propinquity. These changes also brought into focus the values of daily interections and social relations that should shape our built environemtn and thereafter shape us. C hange sometimes comes in the most unexpected forms, but it is only if we engage the turbulences with a clear sense of purpose, that we can learn from these experiences and bounce back stronger. The jpourney of this studio prepared us to advocate for more than a mere return to normal, as the normal was unsustainable to begin with. But it also demonstrated that change is indeed possible, and reinforced our sense of agency.

Cooperative Housing for the 2000-Watt Society

Stefan Gruber
Associate Professor of Architecture and Urban Design
School of Architecture
Carnegie Mellon University
Spring 2020

Participating students:

Alvin Wong, Benita Nartey, Deepthi Ganesh, Fernanda Mazzilli,
Fon Euchukanonchai, Hugh Lee, Juliane O'day, Shariwa Sharada,
Tye Silverthorne, Yashwitha Maram Reddy, Yeong Il Jo, Zoe Lin.