Collective Grounds:

Reclaiming the Commons in Bronx CLT/Co-op Hybrids

A non-degree-required thesis
submitted to the
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by

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Abstract

This thesis explores how new configurations of community land trusts (CLTs) and housing cooperatives can create aggregating spatial hybrids. Focusing on Bronx neighborhoods facing intersecting crises of housing insecurity, climate vulnerability, and energy burdens, the project proposes a networked approach to retrofitting existing residential buildings through economies of scale and creative space planning. Rather than treating each property as an isolated asset, the thesis investigates how buildings, blocks, and urban-scale infrastructure can become vehicles for permanently affordable housing, energy autonomy, and climate resilience—when reimagined as collectively held and managed commons.

Drawing from the spatial traditions of co-housing communities, the project examines how shared ownership and stewardship through hybrid land trust models can enable more resilient systems and communal living configurations. Using four typical Bronx residential typologies, the thesis proposes retrofit strategies and spatial interventions that extend beyond conventional efficiency upgrades to support new forms of collective housing. The sequencing and scaling of these interventions—from individual units to the neighborhood level—push both the limits of common building forms and conventional assumptions around privacy, dwelling, and property boundaries.

The resulting design scenarios explore how CLT/co-op hybrids can support shared energy systems, communal amenities, and adaptable units that respond to resident and community needs. The thesis calls for a shift in architectural practice: from producing isolated objects to building frameworks for shared use and governance. It asks how architects might move beyond the scale of private property to support communities as they stitch together more expansive, integrated, and resilient spaces.

Limitations

While this thesis initially aimed to incorporate a community engagement framework, it ultimately shifted toward identifying spatial strategies and speculative design interventions. As such, it does not fully address the practical considerations of phasing, funding, or regulatory constraints that would shape real-world implementation.

However, these scenarios are intended as tools to support resident groups in envisioning creative space-sharing possibilities—beginning at the point of property acquisition. A future phase of this work could link these interventions to specific funding streams and policy mechanisms, bridging the gap between visioning and planning.

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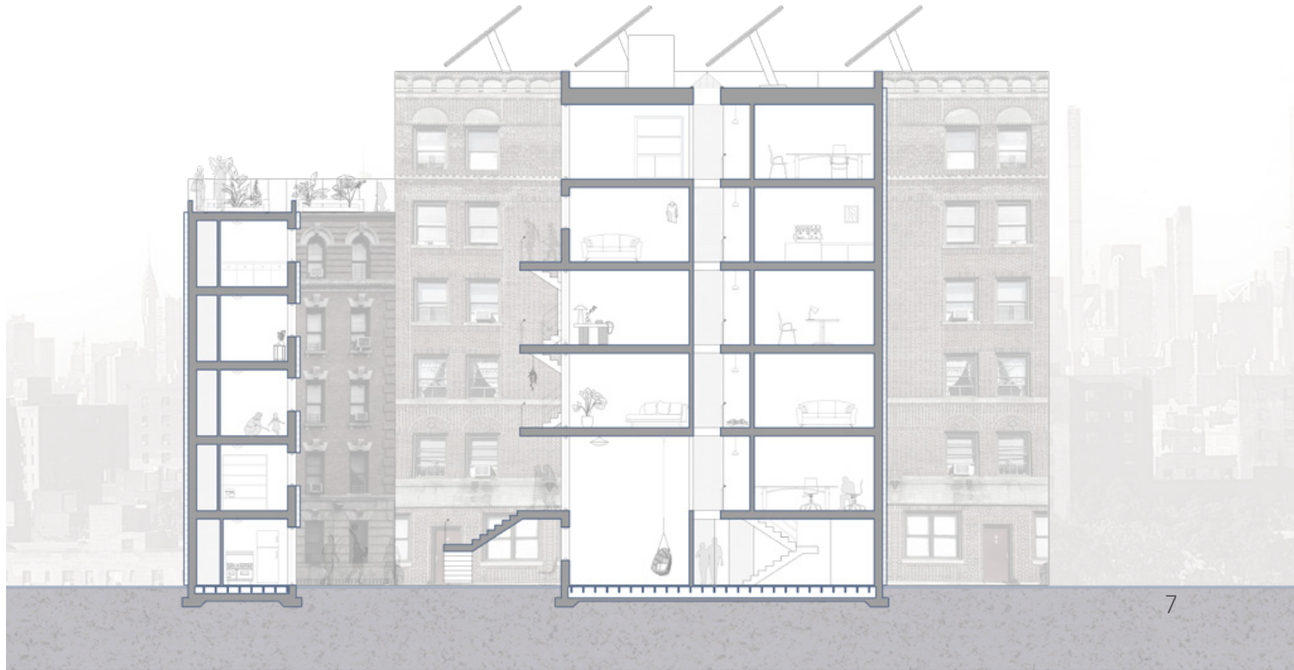

The Bronx was chosen as the site for this exploration of spatial hybrids—models that combine collective ownership, retrofitting, and shared infrastructure—because it exemplifies both the overlapping crises and subsequent possibilities at the intersection of housing and climate justice.

The borough faces acute renter insecurity driven by speculative investment and displacement, as well as disproportionate environmental burdens rooted in decades of disinvestment and infrastructural violence, such as the Cross Bronx Expressway, which physically divided neighborhoods and intensified local air pollution. These conditions leave residents increasingly vulnerable, with limited resources and some of the highest energy costs in the city—further deepening the threat of housing instability.

Yet within this context, the Bronx also offers the potential for transformation through aggregated density and collective stewardship, building on its deep history of resident organizing and housing justice coalitions.

1.5 million

had their utilities shut off in the past 5 years, predominantly in areas like the Bronx

20.3%

of Bronx residents own their homes, compared to 30% across New York more generally

34%

of Bronx households are highly energy burdened, spending more than 6% of their annual income on energy bills

Community Land Trusts (CLTs) are powerful long-term mechanisms for securing permanently affordable housing by removing land from the speculative market. However, like many ownership models, CLTs often fall short when it comes to fostering collective spaces, shared governance, and cooperative stewardship. In particular, traditional single-family CLTs can replicate many of the fragmented conditions of market-rate homeownership—offering affordability without necessarily enabling communal living or shared infrastructure.

While some CLTs do achieve efficiencies at the organizational or network level—through maintenance, weatherization programs, or land acquisition strategies—these efficiencies rarely extend to the scale of the dwelling. Properties are often acquired one by one, with minimal coordination between owners or across sites, limiting the potential for space and resource aggregation.

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Housing cooperatives (coops), in contrast, frequently support shared decision-making and resource pooling at the scale of the building, making them well-suited to collective living and stewardship. Yet co-ops typically lack the mechanisms to ensure long-term affordability and rarely operate at a network scale capable of coordinating acquisitions or retrofits across multiple sites.

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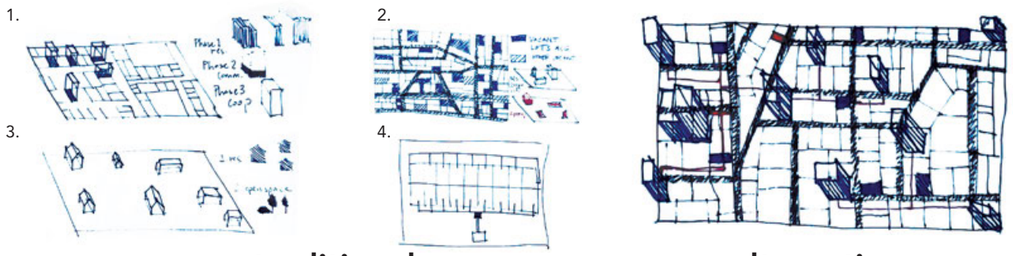
Hybrid CLT/co-op models offer a unique alternative by combining the enduring affordability of CLTs with the spatial and social benefits of cooperative living. When coordinated strategically, such hybrids can support shared infrastructure, governance, and retrofits across buildings—unlocking efficiencies at both the unit and network levels.

single family *sole ownership*	multi-family *rental*	single family *CLT*	multi-family *coop ownership*	
no collective	little	little	ample	*commons*
no safety net	insecure	secure	fluctuating	*housing security*
expensive retrofits	top-down	limited	limited	*accessibility*
individual	none	individual	collective	*autonomy*



traditional **alternative**

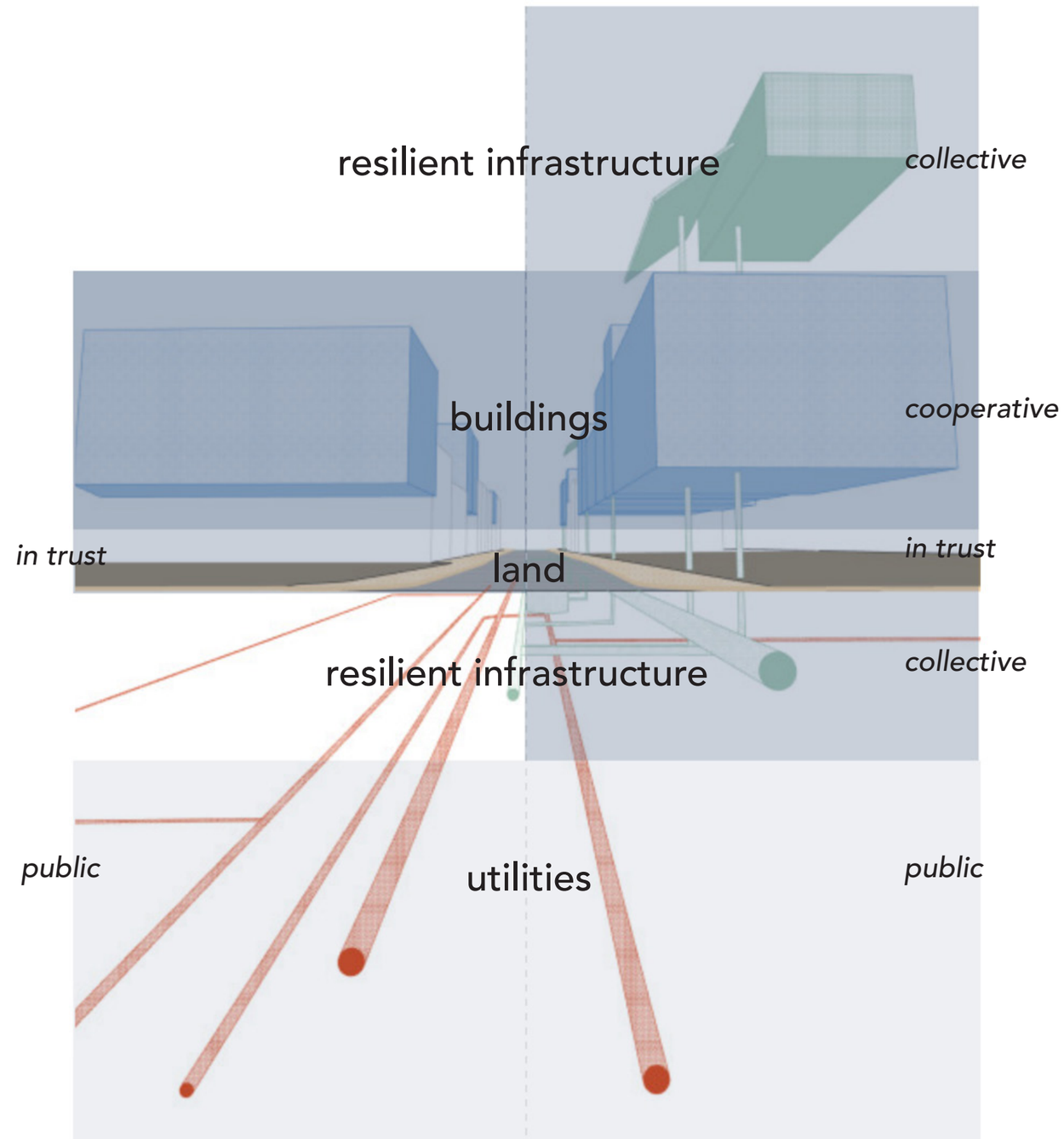
1. Cooper Square
2. Dudley Street Neighborhood Initiative
3. Oakland CLT
4. Oakland EcoBlock

Most community land trusts follow a scattered-site acquisition model, often focusing on individual lots or buildings, which can limit opportunities for spatial aggregation, shared infrastructure, and the networked benefits that come with more coordinated block- or cluster-scale strategies.

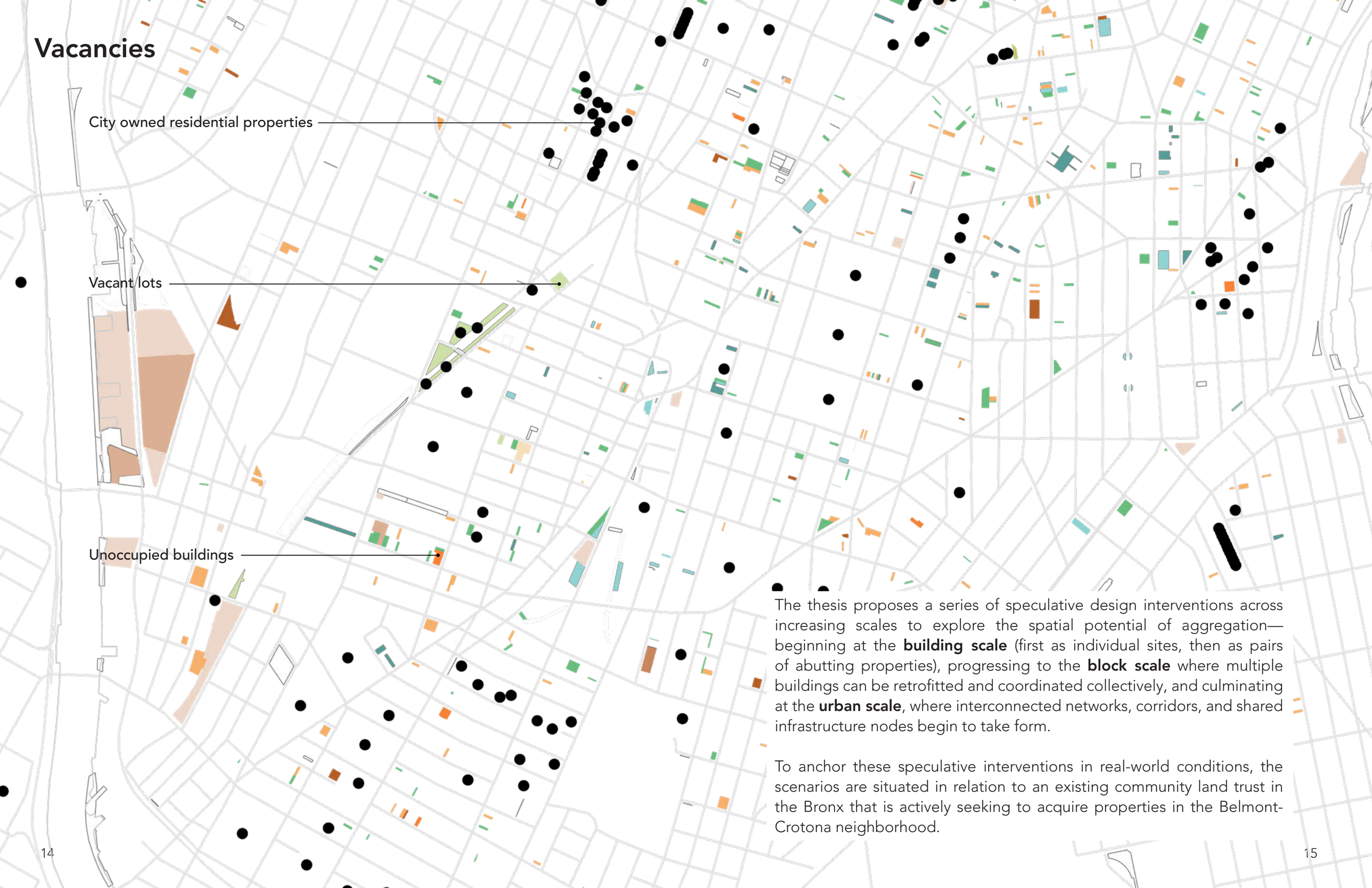
This thesis does not propose an entirely new property model—CLT/co-op hybrids already exist—but rather pushes this hybrid further by framing it as a spatial problem. The goal is to advance how these models address collective efficiencies and the production of Commons through design. Retrofits become a spatial problem when they extend beyond individual energy upgrades and begin to creatively collectivize, aggregate, and mutualize space and resources. At scale, these strategies can lower energy burdens for residents and support decarbonization far more effectively than isolated, building-by-building interventions.

The architectural proposition of this thesis emerges through aggregation—by imagining and designing for shared infrastructure, collective retrofits, and communal spaces that extend beyond the boundaries of a single property. At the property level, it challenges the individualized logic of private ownership, where retrofits are often siloed, inefficient, and financially inaccessible. At the design level, it calls for a shift away from treating buildings as isolated objects, and toward anticipating interconnection and scalable coordination.

Traditional CLT v. CLT-Coop hybrid



Vacancies



The thesis proposes a series of speculative design interventions across increasing scales to explore the spatial potential of aggregation—beginning at the **building scale** (first as individual sites, then as pairs of abutting properties), progressing to the **block scale** where multiple buildings can be retrofitted and coordinated collectively, and culminating at the **urban scale**, where interconnected networks, corridors, and shared infrastructure nodes begin to take form.

To anchor these speculative interventions in real-world conditions, the scenarios are situated in relation to an existing community land trust in the Bronx that is actively seeking to acquire properties in the Belmont-Crotona neighborhood.

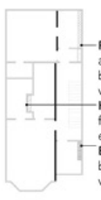
potential properties

The neighborhood where the Bronx CLT is looking to acquire property has a particularly varied housing profile, both in terms of scale and building period. Across this variation, property data mapping revealed 4 common construction periods and building typologies that can be considered representative of the neighborhood's existing housing stock. Each of these typologies has unique material, structural and spatial characteristics that are more or less suited to space sharing strategies and aggregated retrofits.

ROWHOUSE

1895-1901
2-3 stories, single or multifamily
Narrow and deep lots, typically 16-25' x 50-100'
Footprint 40-50' deep, rear yard of 15-3'

brick or brownstone-clad
Renaissance Revival
Smooth limestone façades
More asymmetrical façades with projecting bays



Plumbing: Usually stacked along a rear or side wall, with bathrooms/kitchens aligned vertically
HVAC: Often retrofitted with forced air or radiators along exterior walls
Electrical: Panel likely in basement, with wiring running vertically

NEW LAW TENEMENT

1901-1915
5-6 stories with basement and often ground floor retail
Air shafts + inner courtyards for lighting and ventilation
Entry vestibules and larger footprint on the site

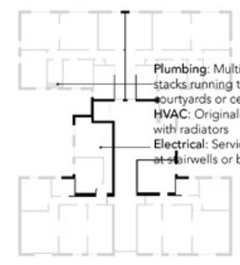
increased sunlight and ventilation
brick façades
fireproof stairwells
fire escapes

Plumbing: Centralized around shared shafts
HVAC: steam radiator heating
Electrical: breaker panels likely in a central location

PRE-WAR APARTMENT

1920-1930
5-6 stories walkup and/or elevator
Double loaded corridors
Ample courtyards and less site coverage

Brick façades
Limestone details
Steel framed with non-load bearing masonry infill walls



Plumbing: Multiple vertical stacks running through internal courtyards or centralized shafts
HVAC: Originally steam heat with radiators
Electrical: Service rooms likely at stairwells or basement level.

GARAGE TOWNHOUSE

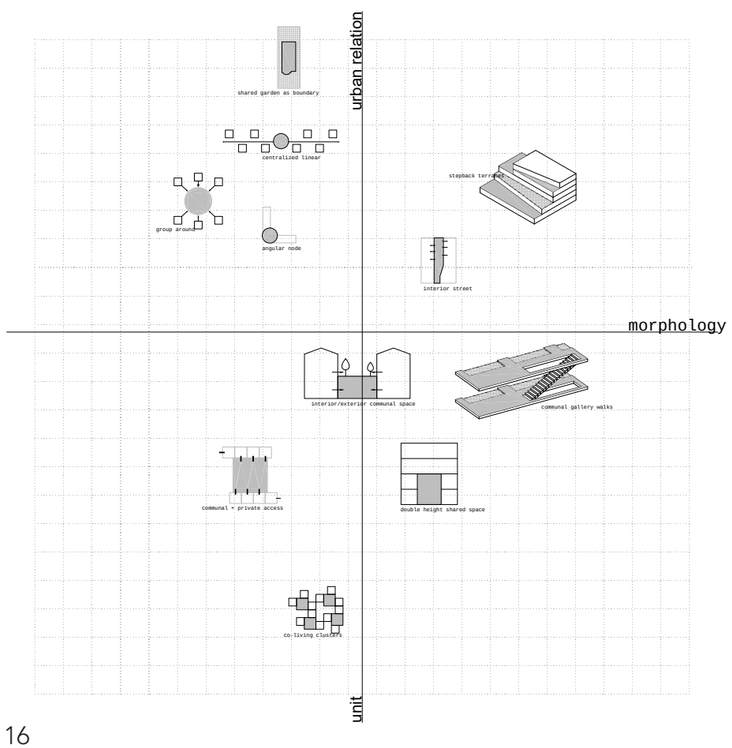
1990-2005
3 stories with semi-basement
Private front-drive parking with curb cuts
Narrow lots, typically 16-20' wide with shallow setbacks

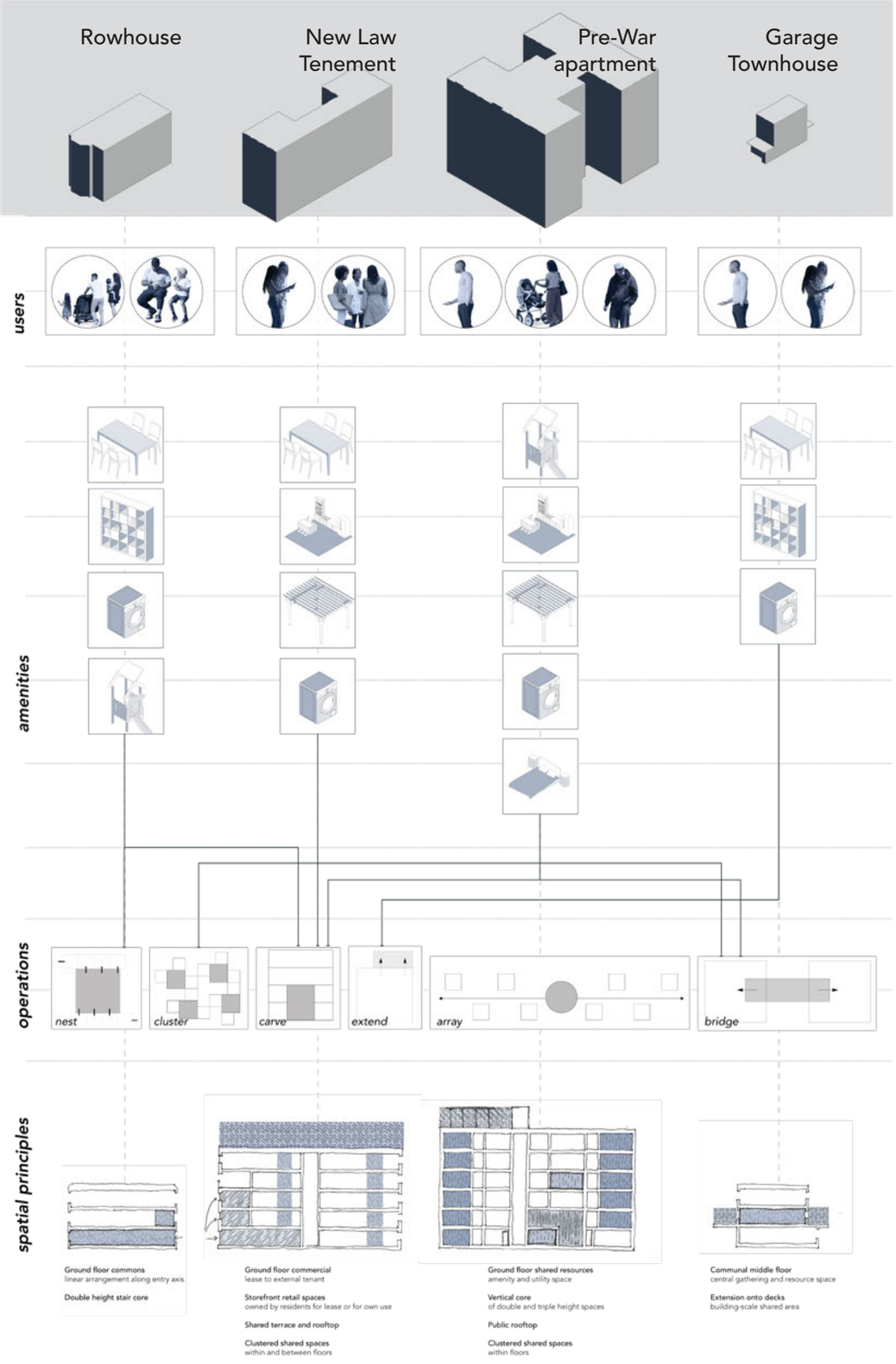
Thin brick veneer
CMU or concrete block
Wood or metal floor joists
Pitched or flat roofs

Plumbing: along shared walls, with stacked services between floor
Electrical: Panel usually in garage or utility closet.
HVAC: Often forced-air systems, ducts running through walls and attic spaces

communal spatial principles

Drawing from the rich history of socialist housing, cooperative experiments, central kitchen models, kibbutzim, and intentional communities, co-housing precedents reveal a wide range of spatial strategies—both formal and programmatic—for structuring shared, semi-private, and private living spaces.





building types lend themselves to particular spatial interventions and aggregated retrofit strategies

resident preferences, resources and spatial needs correspond to inherent features in the existing buildings

resident profiles in turn correlate to certain spatial resources, in the form of amenities, shared spaces and energy

the existing building conditions, in dialogue with the resident-specific amenities, give rise to a set of spatial moves

Existing built conditions, resident dispositions, and spatial resources/amenities lend themselves to certain spatial moves and operations, which help establish typology-specific guiding rules.

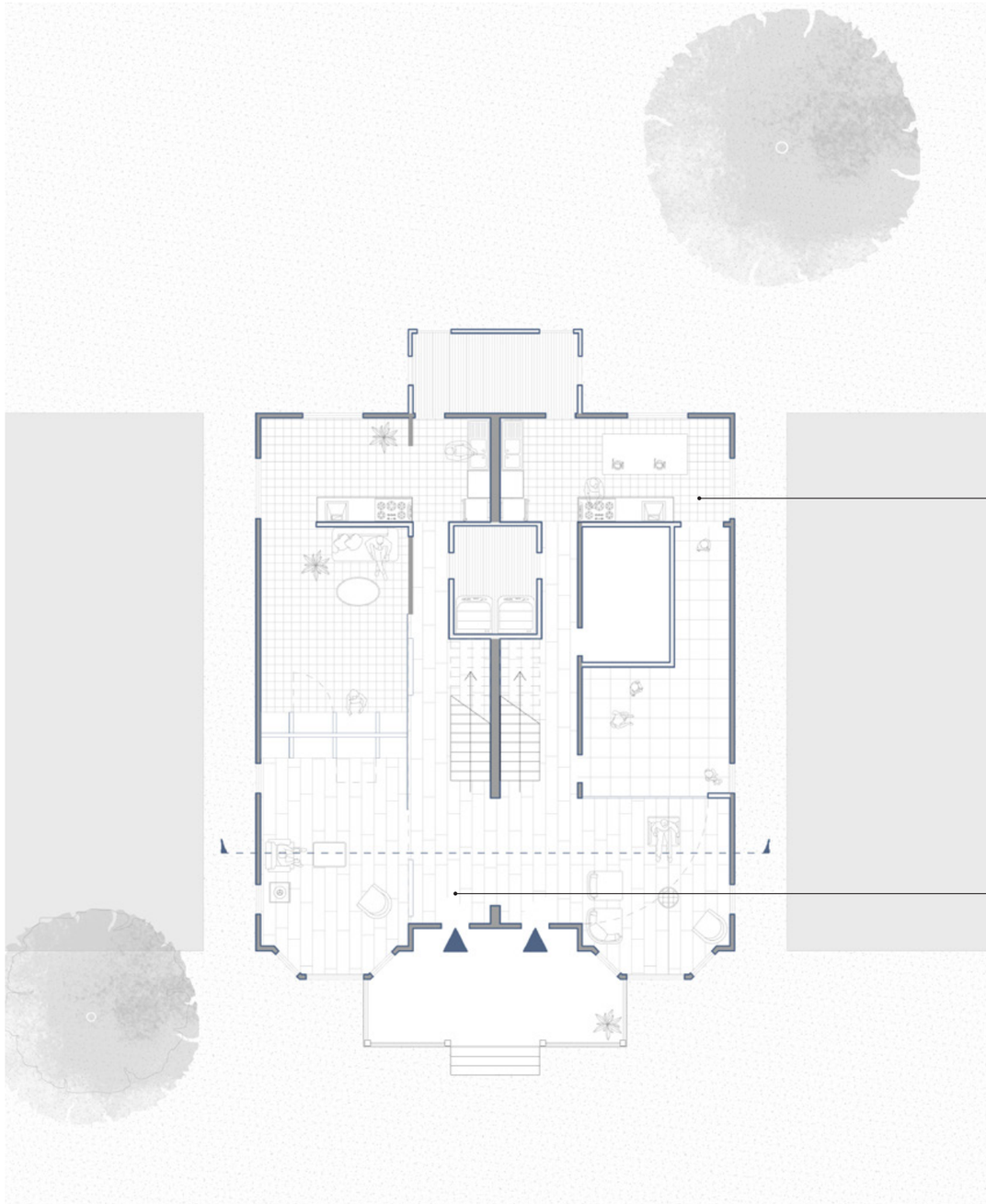
Spatial interventions are first explored at the scale of the individual building, responding to the distinct material and spatial potentials of each typology. The rowhouse can carve vertical space to create family-centered amenities such as playrooms. The New Law tenement integrates commercial storefronts and clusters shared amenities between units, catering to small families. The pre-war apartment introduces double- and triple-height spaces to signal community-accessible areas beyond the CLT or co-op, including adaptable caregiver zones. The garage townhouse, by contrast, adopts an inward-oriented configuration focused on singles and couples.

These typology-specific interventions operate along a communal gradient—from the garage townhouse as the most private, to the pre-war apartment as the most public-facing. Each explores the Commons at the scale of the dwelling through public/private thresholds that are adaptable and increasingly porous.

The following design explorations test three aggregations of these four building types, examining how resource and space sharing can evolve at scale. New spatial possibilities emerge in plan—through connections like spanning structures, relationships between storefront and back-of-house functions, and enclosed courtyards—and in section, through shared rooftop access and vertical layering.

Together, these interventions challenge narrow definitions of retrofit by framing collective spaces not only as socially connective but also as inherently ecological and efficient.

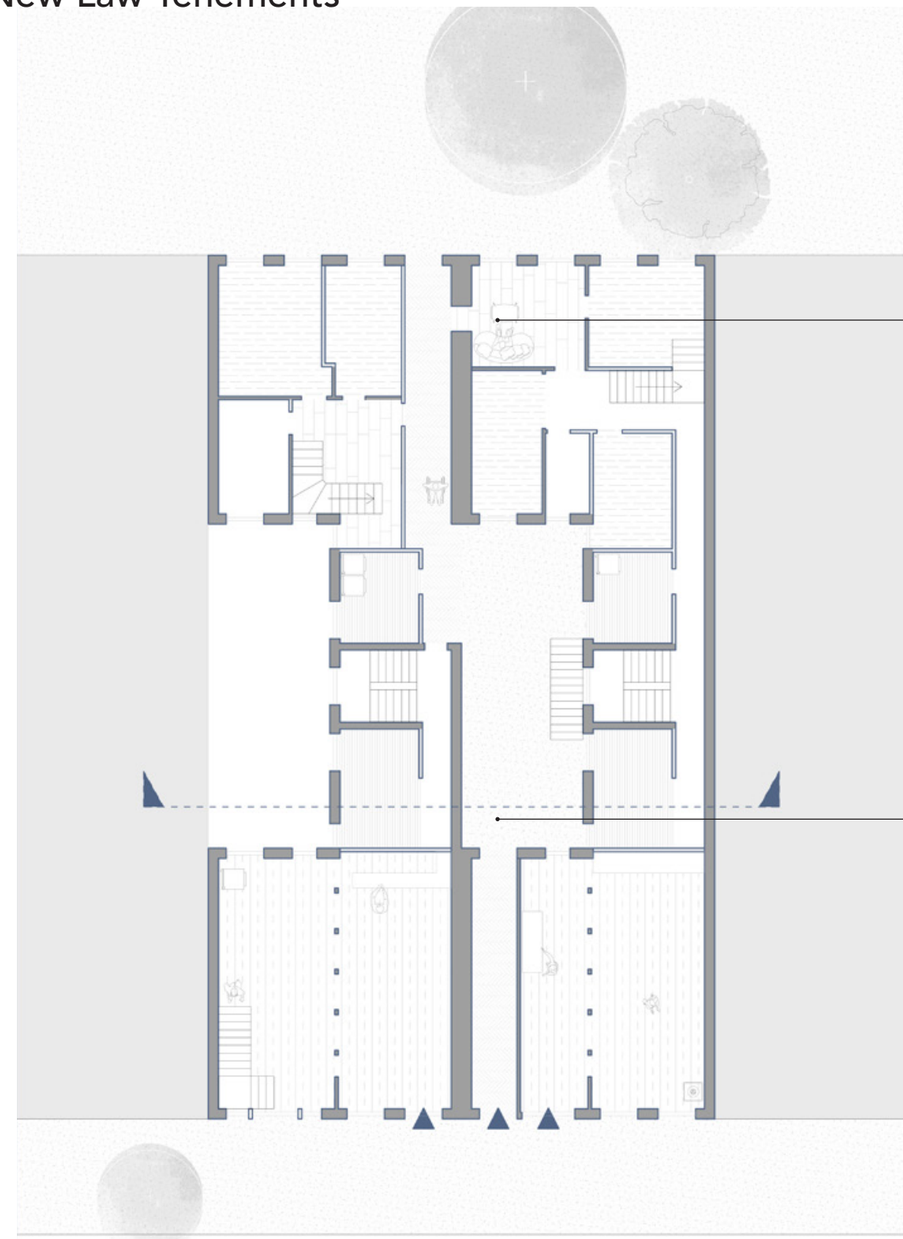
Aggregation 1:
2 Rowhouses



shared kitchen and daycare

double height entryway

Aggregation 2:
2 New Law Tenements



inter-building kitchen, dining and bulk storage space

connected courtyard

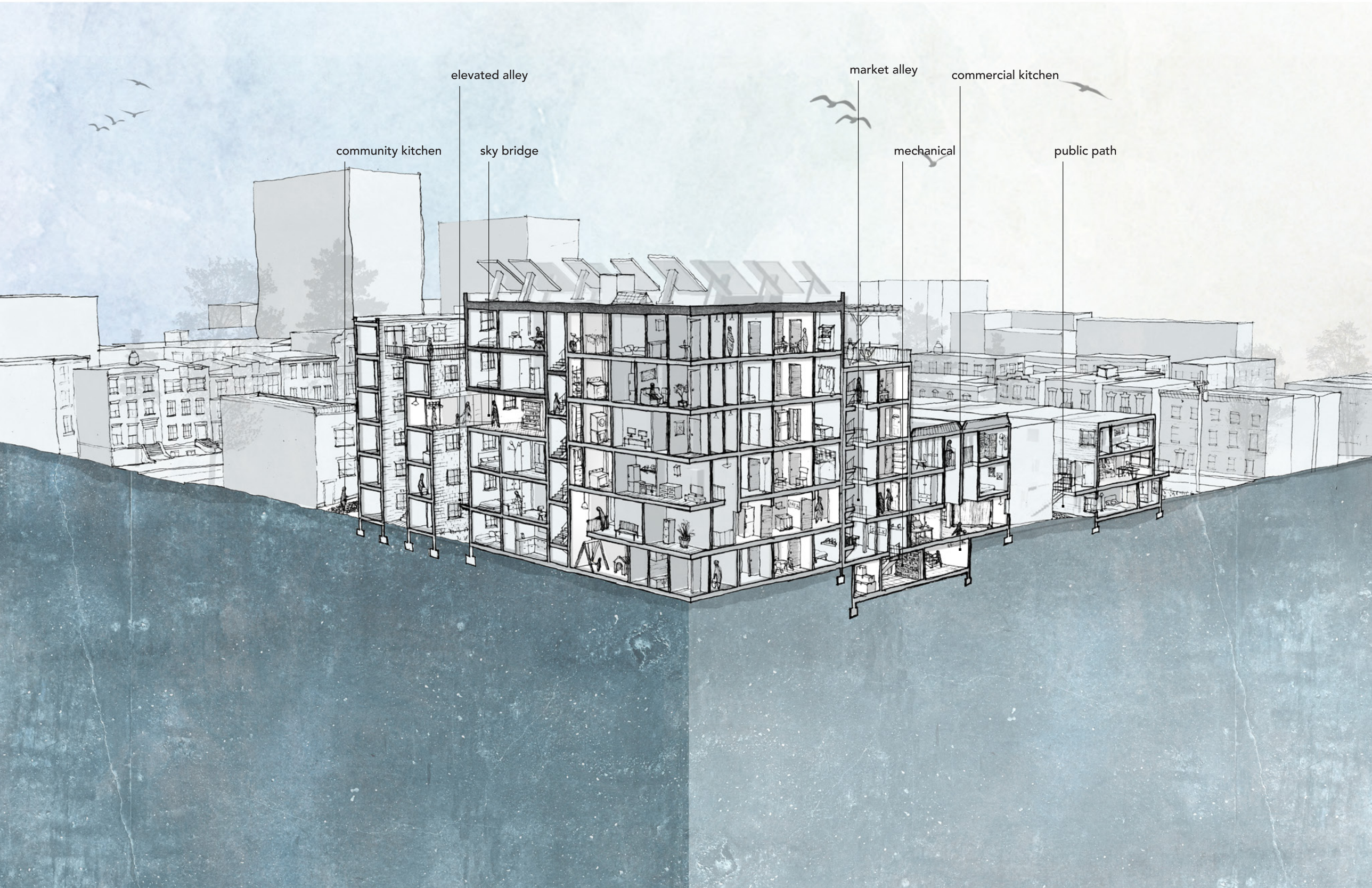
Aggregation 3:
New Law Tenement + Pre-war apartment

occupiable and utility roof

double height community hub

Reclaiming the block

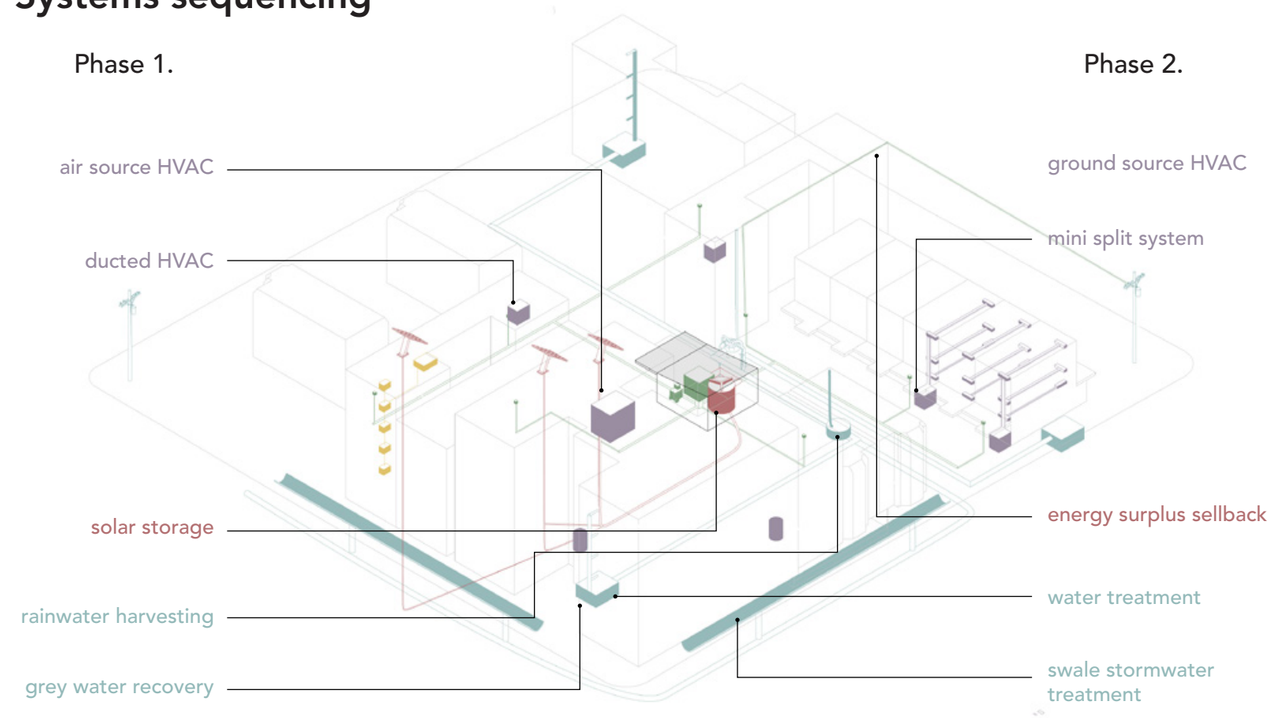
Further aggregation at the block scale allows even more possibilities to emerge, spanning spaces between buildings, digging underground, and creating conditions for a backyard Commons.


elevated alley
market alley
commercial kitchen
community kitchen
sky bridge
mechanical
public path

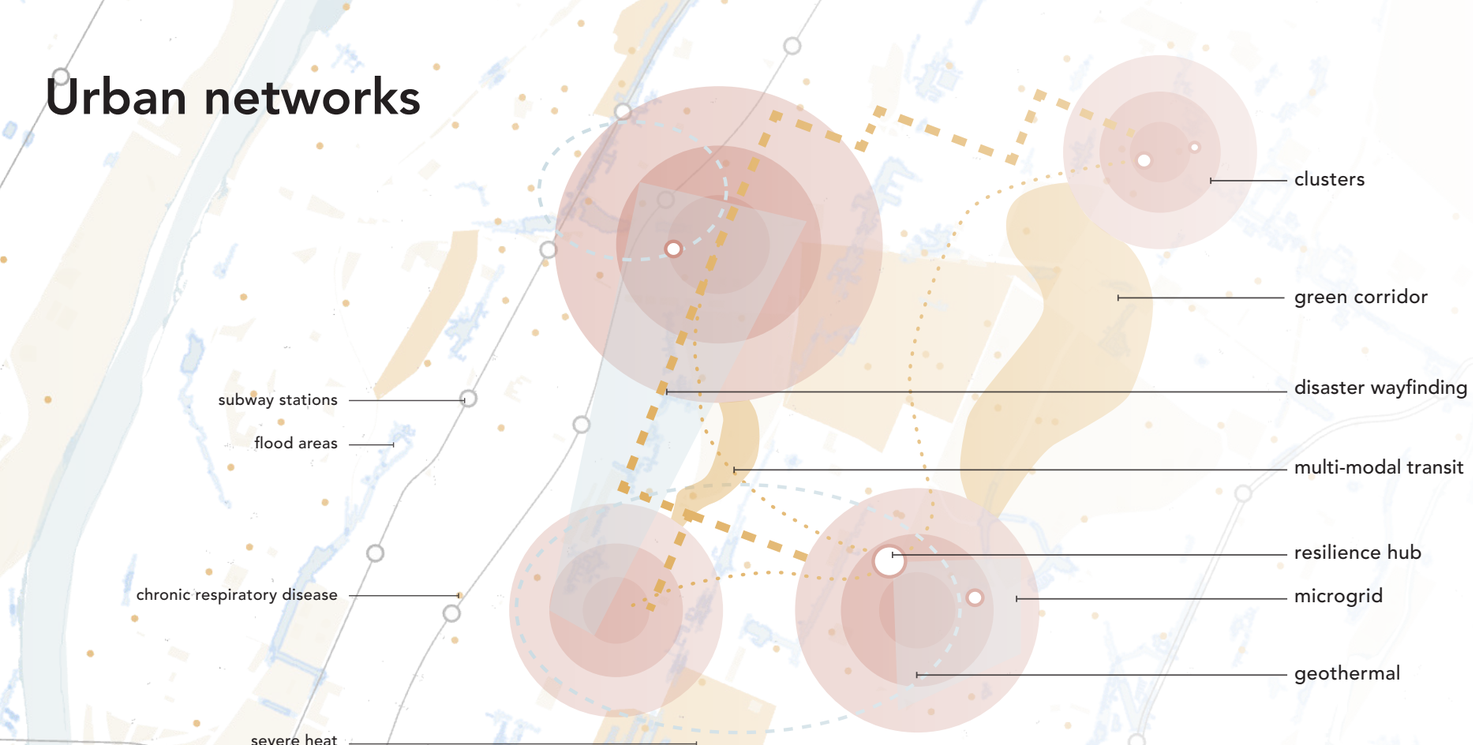
Block scale aggregation, also allows new energy systems to become shared resources that are increasingly efficient with increasing scale. Phasing can make these water, electrical, and HVAC systems more accessible, facilitated by pooling land value through the CLT.

low / no barrier | moderate permitting | involved permitting

Systems sequencing



Urban networks



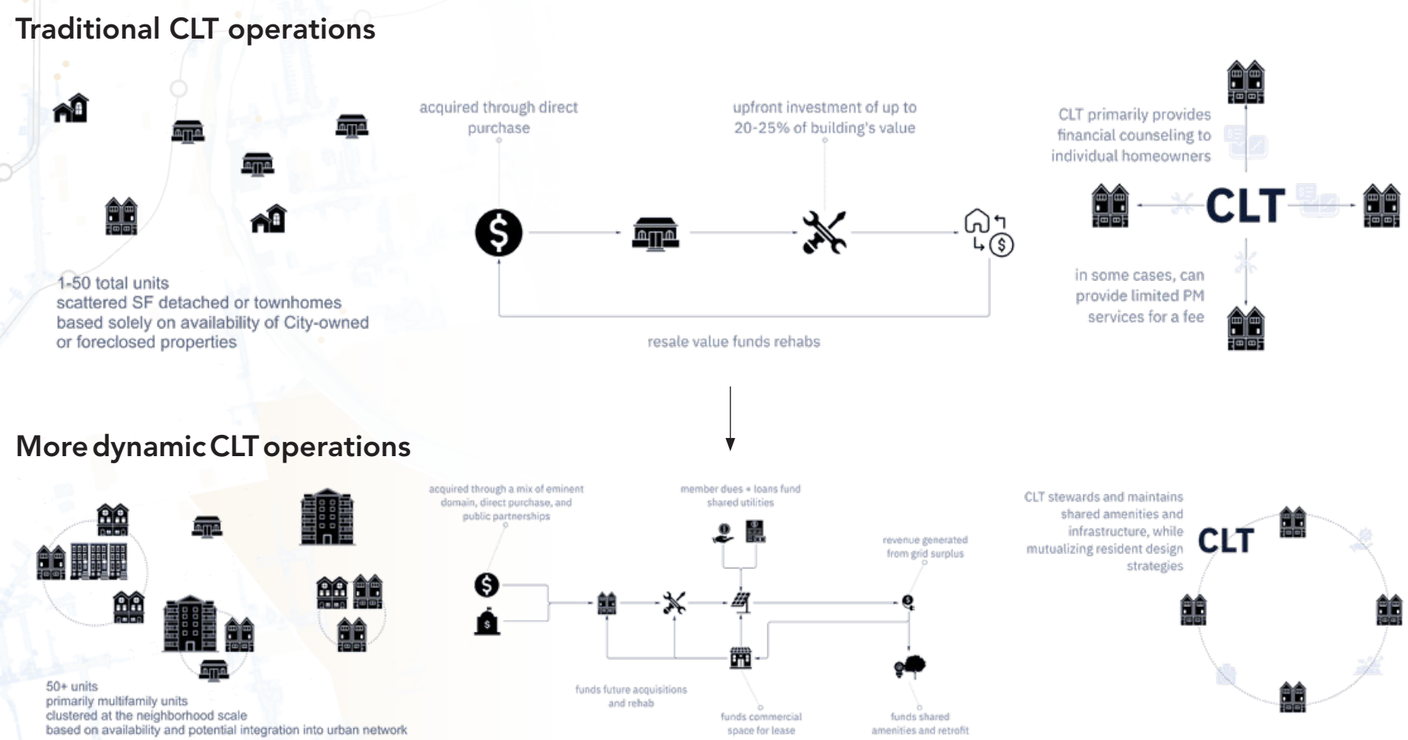
At the urban scale, resource sharing and aggregation take the form of Nodes—resilience hubs and communal space clusters—and Branches—corridors of energy infrastructure, mobility, and decarbonization.
These elements begin to link block-scale aggregations across the Bronx, extending beyond individual CLT parcels to integrate into the broader urban fabric. In doing so, they can begin to address systemic ecological vulnerabilities, such as urban heat islands, through scaled retrofits and climate-responsive infrastructure.
These tangible and intangible resources begin to blur the boundaries of the CLT itself, positioning it as a generator of urban-scale climate amenities that serve not just its members, but the wider Bronx community.

Scaled stewardship

For these somewhat ambitious and atypical space sharing and aggregation strategies to be feasible in low-income neighborhoods of the Bronx, the CLT would need to adopt an expanded role—actively stewarding shared resources across its property portfolio.

While traditional CLTs generate only modest revenue through property resale, a more dynamic model could leverage upfront investments in retail and energy infrastructure to create ongoing income streams. Retail rents and energy grid sellbacks could generate a feedback loop of revenue, that CLTs can reinvest in phased retrofits, climate upgrades, and shared infrastructure.

In this model, the CLT/co-op structure becomes more resilient over time, with the CLT serving as a key mediator and steward of collectively owned and managed assets.



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