

Reorienting Urban Design Methods for Commoning

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In the face of climate crisis, rising inequity, and the ever-expanding commodification of urban space, the urban design discipline is confronted with challenges that often exceed its traditional design methods. State and market action shaped by capitalism continues to produce rising inequity, ecological destruction and imbalances of power in communities around the world.¹ Normative urban design methods have focused on shaping urban form through scripting and projecting typo-morphological patterns of built form, choreographing experiences of the public realm, organizing systems of mobility, infrastructure and ecosystems, and regulating the city through policy regimes.² However, the emergence and maturation of the discipline as response to the expansion and fragmentation of urban form during the late twentieth century has operated in parallel to ever intensified commodification of the city. While recent work has brought a renewed focus on ecosystems and sustainability oriented regimes of regulation, the challenges of access, equity and ecological crisis persist. An emergent discourse around urban commoning has identified the capacity of citizen-led resource sharing practices to respond to these challenges in ways that neither the state nor the market alone is able to.³ Processes of commoning create bottom-up transformations of political discourse, patterns of spatial use, management of resources, structures of ownership and value-capture, and the repositioning of productive and reproductive labor.⁴ This paper explores how normative urban design methods might be reoriented to advance urban commoning projects, learning from goals, practices and patterns of real-world case-studies of urban commoning. It builds on recent literature on urban commoning, and summarizes a range of commoning oriented design approaches selected from five years of student thesis projects.

NORMATIVE URBAN DESIGN METHODS AND NEOLIBERAL URBANIZATION

Since the mid-twentieth century the urban design discipline has developed a range of methods for guiding the growth, re-configuration and revitalization of urban environments. Urban

design has also developed a variety of modes of engagement with urbanization processes, ranging from creating relatively loose guidance for future development, to developing highly detailed designs for new districts, building agglomerations and public spaces.⁵ In this period the discipline also has developed a spectrum of attitudes about how new buildings and public spaces should relate to the historic fabric of cities, from approaches seeking to restore and reproduce pre-modern urban forms, to projects advancing both modernist and novel hybrid forms.⁶ As a discipline that is often in a position to coordinate a range of other practitioners, urban design has the potential for enormous agency to shape the built environment, create value, and guide the present and future use of resources.

Foundational methods of the discipline might loosely be grouped into two broad categories focused on shaping urban form and choreographing urban experience. With a focus on form, the work of Colin Rowe, Aldo Rossi, O.M. Ungers, Rob Krier and others established typo-morphological methods for analyzing existing formal patterns and using them to guide the form of new districts, and at times entire new cities.⁷ Methods focused on shaping experience and human behavior pioneered by Gordon Cullen, Kevin Lynch, Jan Gehl and others have, in contrast, emphasized techniques of scenic analysis, memory mapping, observational research and an emphasis on the design of the space, affordances, and image of the public realm.⁸ In more recent decades the discipline has turned towards conceptualizing cities as ecosystems with a new focus on shaping systems of infrastructure and open space as frameworks for urban growth, along with a new emphasis on the use of performance metrics, with both seeking to respond to the environmental impact of contemporary urban growth patterns.⁹ In this period the discipline also reasserted its role in the creation of regulatory frameworks, engaging in diverse projects seeking to reform zoning codes, street design manuals, and housing and transportation funding policy.¹⁰ Finally, urban design has developed a range of participatory methods of soliciting input from a range of stakeholders, typically with the goal of building consensus around a set of goals and proposed design outcomes.¹¹ In the roughly seven decades since urban design's emergence as an academic and professional discipline these foundational design methods have coalesced into a normative

basis for design that arguably underlies even stylistically disparate practice positions.

However, the evolution of the discipline has operated in parallel to the rise of neoliberal policy regimes and ever intensifying enclosure and commodification of urban space.¹² Through policy favoring deregulation, competition and privatization, neoliberalism has evolved new methods of extracting value from both the physical spaces of the city and the processes of everyday life situated within it. As Neil Brenner and Nik Theodore have written, this process has produced spatially uneven effects on both existing cities and urban development processes, resulting in different paths in the United States, Europe, China and the global south.¹³ In many urban regions this process has led to competition to attract capital, leading local governments to engage in new financialized forms of public-private partnerships designed primarily to support the production of real-estate value and securitizable debt. More often than not, this process involves the transformation of fragments of the existing city, with policy often being used to support a cycle of devaluation designed to set the stage for transformation and hyper-commodification.¹⁴ In other manifestations it has led to massive investments in infrastructure, creating rapid urban growth that has transformed both the landscapes and life worlds of entire regions.

As a set of normative methods, urban design in actual practice is typically leveraged to support these processes, dictating future urban form, creating new public space networks, and producing regulatory mechanisms to guide development over time. In theory normative methods value responding to both local needs and existing patterns of urban form, use and culture. However, when embedded within neoliberal development processes, in practice urban design's output is too often overwhelmed by financial development logics and larger socio-political dynamics. As David Harvey puts it, "the traditional city has been killed by rampant capitalist development, a victim of the never-ending need to dispose of overaccumulating capital driving towards endless and sprawling urban growth no matter what the social, environmental, or political consequences."¹⁵ Hyper-commodification of real estate and public space erodes the ability of communities to control their own space, over bureaucratizing its use and modification, and financially limiting, or even precluding, its access over time through gentrification or even forced relocation. Neoliberalism's emphasis on property rights, competition and wealth creation, its fiscal policy favoring the already wealthy, and its entangled relationship with carbon is in direct conflict with the balancing of both power and environmental impacts.¹⁶

If urban design is understood as a facilitator of urbanization processes guided by neoliberal state and market partnerships, it comes as no surprise that its traditional design methods struggle to adequately respond to contemporary crises of inequity and ecological devastation. In the face of this challenge,

how might the discipline's normative methods be reoriented to support the right of citizens and communities to shape the processes of urbanization? How might they be better used to advance social and ecological justice?

COMMONING AS COUNTERVAILANCE

One site of resistance to neoliberal urbanization has been the emergence of new, and reaffirmed, collective resource sharing practices and assertions of collective rights advanced by citizens in cities around the world.¹⁷ Many of these emergent projects and social movements can be understood as processes of *urban commoning*. "Commoning is a process of negotiating differences and conflicts between the individual, the community and society. It is a process that involves the spatial organization of the relationships between production and reproduction, ownership and access to resources."¹⁸

At a fundamental level commoning projects are attempts to reassert collective democratic control over the space, value and resources generated through the process of urban development. They can be seen as a potential source of *countervailing power*, a way of pushing back against the lack of citizen control and the absence of social and ecological justice in contemporary cities.¹⁹

How then, might urban design be leveraged to support a commons transition?²⁰ How can the normative design methods of the discipline and their agency be reoriented to support processes of commoning? How might this vary from one place to another? Where is this happening on the ground already, and what can we learn from real world examples of commoning?

COMMONING THE CITY STUDIO

Since 2017 we have explored these questions in Carnegie Mellon University's Master of Urban Design program through case-study research and student thesis projects situated in cities around the world. The year-long *Commoning the City* studio taught by myself and Associate Professor Stefan Gruber researches global examples of commoning projects, reviews commoning theory, and asks students to explore design as means of facilitating commoning processes. The research phase investigates a set of case-studies in a particular urban region and includes a research trip.²¹ The growing collection of over 50 case-studies also continues to feed into the long term traveling ifa sponsored exhibition *An Atlas of Commoning* developed in collaboration with ARCH+.²²

For their thesis projects students focus on an urban milieu of their choice, research its actors and explore its social and ecological issues, and ultimately posit a hypothesis about how urban design might support new forms of resource sharing. This process seeks to understand how market forces, resource cycles, ecological issues and social and political power dynamics produce inequities and environmental conflicts. Students then ask how the design of new forms of resource sharing

might begin to improve the situation. This might take the form of new cooperative structures for housing or labor, collective resource management processes, new organizational capacity to shape development processes, reforms to regulatory regimes, or pedagogical projects to share knowledge.

To develop their design approach, students are asked to consider how urban design agency, understood in an expanded field illustrated in *figure 1*, might be leveraged to advance their commoning proposal, and how normative design methods might be utilized to test and advance their project. This diagram situates normative urban design methods focused on shaping form, experience, ecosystems, and regulations (or more broadly the social contract), in relation to a broad range of common pool resources, and potential design patterns that might support resource sharing, management, protection, growth or creation. It also challenges students to conceptualize their urban design interventions in relation to both physical resources, such as buildings, infrastructures and materials, and socio-economic resources, including services, labor, wealth, and political agency.

This approach to conceptualizing urban design agency is informed by planning theorist John Friedmann's writing on *Radical Planning Practice*, as well as design theorists Terry Irwin, Gideon Kossoff and Cameron Tonkinwise's *Transition Design Framework*, both of which organize design goals and action around facilitating societal systems transformations.²³ This expanded view of urban design agency goes beyond a tight focus on shaping buildings, public spaces and infrastructures,

to also consider how the discipline might participate in shaping systems of labor and wealth, services and care, and ownership, rights and governance.

The resulting student projects have explored how normative urban design methods might be applied to advance commoning processes. A number of themes have emerged during the five years of thesis projects which are discussed below.

DESIGNING SPACE AS A SHARED COMMUNITY RESOURCE

A number of projects in the studio have asked how the form of buildings, blocks and districts might support the sharing of physical space as a communal resource. In these projects techniques of typo-morphological analysis, manipulation and deformation, and flexible guidelines and tectonic elements are leveraged to create shared space, and promote shared labor and control.

For example, a project by Jianxiao Ge explored how a state-led public housing proposal for a contested urban site in Taipei might be reorganized around a nested hierarchy of communal spaces and programs. The project utilizes relatively basic urban blocks with shared courtyards and a distributed network of public open spaces, but the organization and programming is framed around the goal of distributing common spaces large and small throughout. Urban design guidelines are used to dictate the basic urban form and create rules for distributing the communal use.

At a more architectural scale, Cassandra Howard's project for cooperative housing to support single mothers in Wilkinsburg, Pennsylvania, asked how multifamily housing typologies might be reorganized to include shared living and cooking spaces for a cluster of apartments, allowing mothers to engage in collective child care, cooking and cleaning. These projects build on case study research looking at housing cooperatives that integrate shared spaces into multifamily housing by deforming standard typologies and organizing communal space distribution using design guidelines. In the case of the *Mehr als Wohnen* cooperative housing development in Zürich this operates through the scaling up of residential blocks to incorporate communal uses, the use of loose-fit urban design guidelines to encourage formal diversity of interpretation, and the distribution of a variety of scales and types of small communal outdoor spaces through the district.²⁴ Many apartment buildings also integrate shared kitchens and living spaces meant to serve clusters of units.

Other projects have explored how creating a flexible kit-of-parts might support shared community decision making, control and management of neighborhoods over time. Yilun Hong's thesis explored how a flexible kit-of-parts might be paired with a new participatory decision-making game, enabling residents of Shanghai's many aging Daniwei housing compounds to incrementally upgrade both their buildings and

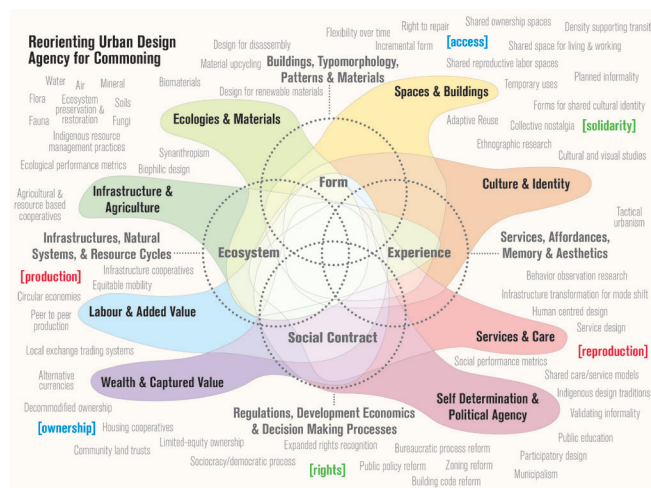


Figure 1. Reorienting Urban Design Agency for Commoning, Jonathan Kline. This diagram illustrates the studio's approach to conceptualizing urban design as means of facilitating commoning processes. Normative urban design methods and fields of agency (circles) are situated in relation to overlapping common pool resources (color blobs) and potential design patterns (text cloud). Students are encouraged to connect urban design's traditional spatial objects of design, found in the top of the diagram, with more socially oriented resources found in the bottom, and to explore how design patterns might support a commoning process.

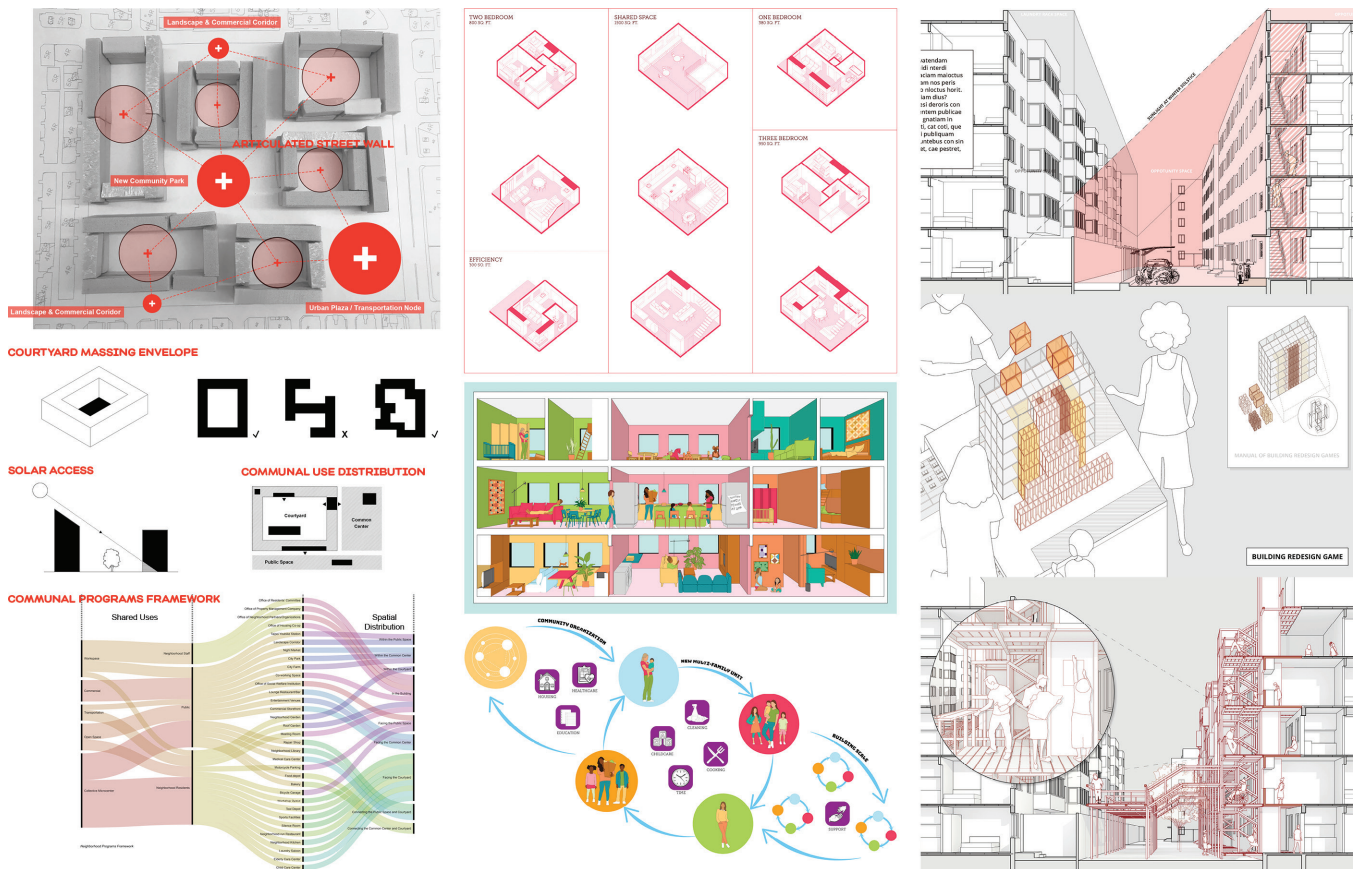


Figure 2. Jianxiao Ge, Sociopolis: Reimagining Public Housing in Taipei (left), Cassandra Howard, The Division of Care (center), Yilun Hong, Shanghai Metabolism: Adapting aging Danwei housing compounds. All three thesis projects use formal strategies to create spaces for social interaction, shared labor, and shared control.

outdoor spaces. Her project, and a number of others, have focused on how a pervasive mid-century housing typology in China might be adapted to improve housing conditions, respond to changing demographics, and mitigate conflict between residents. Yilun's project builds on a case study of the flexible kit of parts designed for the *Hallenwohnen* at *Kalkbreite Cooperative's Zollhaus* in Zurich. Here a moveable framework can be reconfigured to adapt to the changing needs of residents in large loft-like shared living spaces.²⁵

FACILITATING SHARED CULTURE, LABOR & KNOWLEDGE

In other projects from the studio design approaches are organized around shaping behavior and social interaction in order to facilitate sharing labor, culture and knowledge. For example, Jinhan Liang's thesis focused on countering social isolation of young and old residents in a gated residential compound in Guangzhou, China. Her proposal combined a new transit shuttle with a network of shuttle stop public spaces designed to facilitate, play, exercise and casual encounter using a combination of playground elements, public art, landscape strategies

and physical manifestations of digital platforms. Jinhan's project used well established methods of shaping the affordances of public space to encourage social interaction, but organized them around a specific goal of countering the disconnection and loneliness she experienced growing up in Guangzhou.

Other projects have explored how shared cultural and labor practices of women might be supported through the creation of dedicated spaces to protect, support and evolve these practices. Kashmala Imtiaz's project to expand an existing women's craft center in Azad Kashmir, Pakistan, sought to counter the displacement of vernacular construction techniques and the loss of women's traditional role in building. Her proposal created a new physical space to preserve and teach craft traditions, while also exploring how vernacular tectonic assemblies might integrate more sustainable materials. The expanded women's craft center integrates bamboo into traditional bhattar and dhajji dewari wall construction techniques, while also preserving underlying ritual seasonal craft practices of lepai plastering, pinjrakari decorative screens and laadhi green roofs.

Kashmala's project built on case studies like Chicago's *Sweetwater Foundation* and Liverpool's *Granby Workshop* that

seek to validate and support traditional making practices by providing space and an organizational structure to teach and empower participants through material practice.²⁶

Sameedha Mahajan's thesis also sought to facilitate shared women's practices in the significantly more precarious Kutupalong Rohingya refugee camp in Bangladesh. The project paired a proposal to add a women's 'commoning kit' to UNHCR's aid regime, with a set of camp design guidelines intended to reorganize existing shelters around shared women's courtyards and insert new educational facilities into the camp. The commoning kit, meant to be shared by 10 households, and managed by the camp's women, consists of supplies to support domestic labor. By adding a second door to existing shelters and selectively relocating a small number of shelters, the project creates protected shared courtyards for women to work together. Sameedha tested the proposal in parts of the existing camp with varying morphologies, and ultimately generated a set of visual design guidelines.

Sameedha and Kashmala's projects both employ detailed typological and material analysis and utilize it to organize new patterns of control for women in their existing communities.

CREATING SHARED INFRASTRUCTURES AND ECOLOGIES

Ecological and infrastructural systems have been the focus of another set of projects emerging from the studio. Yashasvi Tulchiya's project explored a community managed model of water infrastructure in the historic core of Udaipur, India. The project proposed a community owned and managed network of restored public fountains and step wells combined with new green infrastructure designed to collect and treat both monsoon rains and dry season grey water. Through a new organization and community programming the project was also positioned as a means to advance citizen science, education and advocacy around water systems ecology, and as a way to connect this to both religious traditions around water, and tourism to the city. Yashasvi's project combined methods of integrating green infrastructure into the public realm, with a scenographic approach to public space design intended to simultaneously restore and amplify cultural specificity, and make

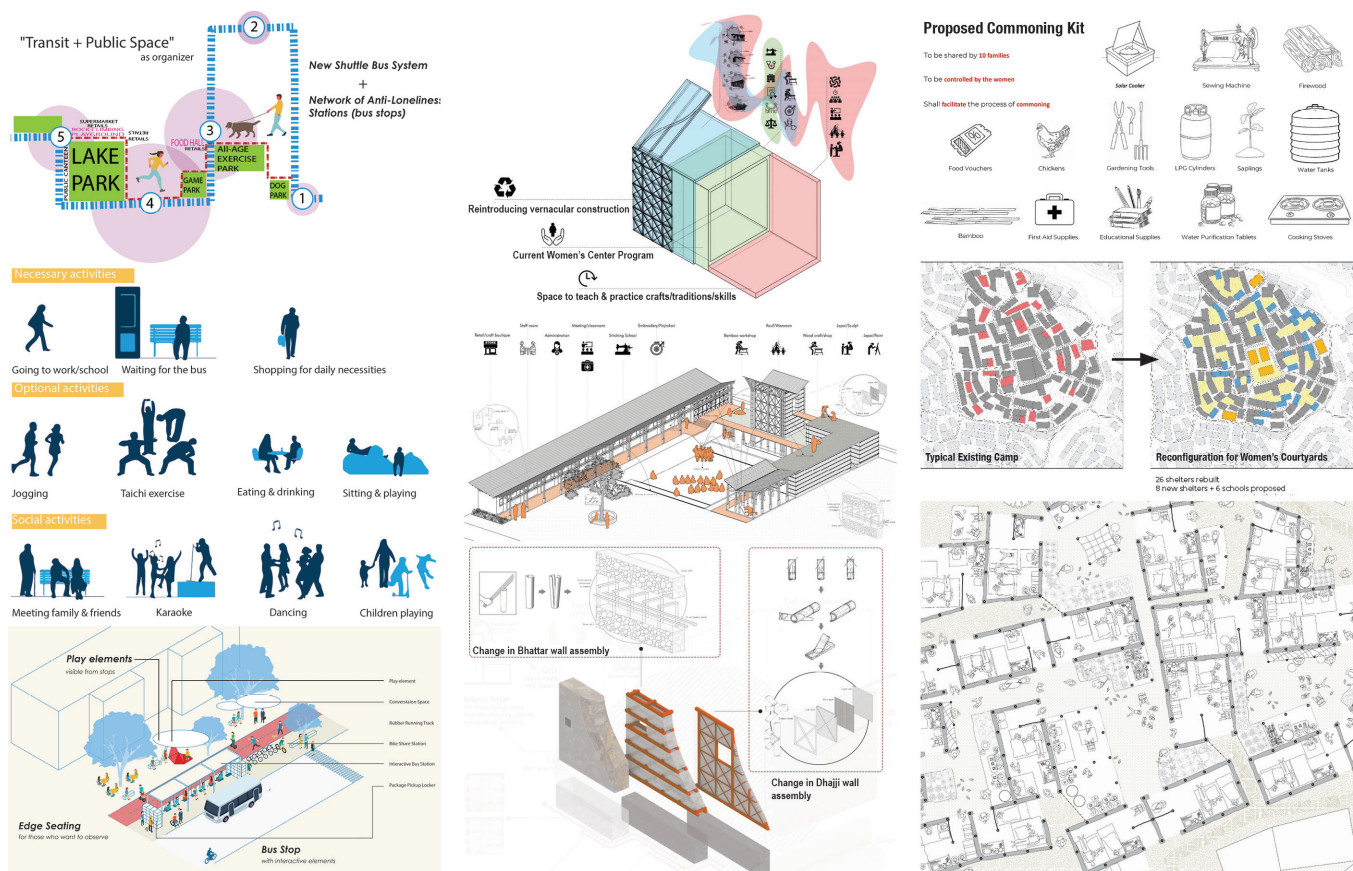


Figure 3. Jinhan Liang, Loneliness in the Gated Community -Fostering social interactions in Daily life in Guangzhou, China (left), Sameedha Mahajan, The Communal Veil: Carving Spaces for Women in the Rohingya Refugee Camps (center), Kashmala Imtiaz, Material Transition and its Socio-cultural Impact - The Case of Azad Kashmir. All three thesis projects seek to facilitate shared practices by creating spatial and material affordances.

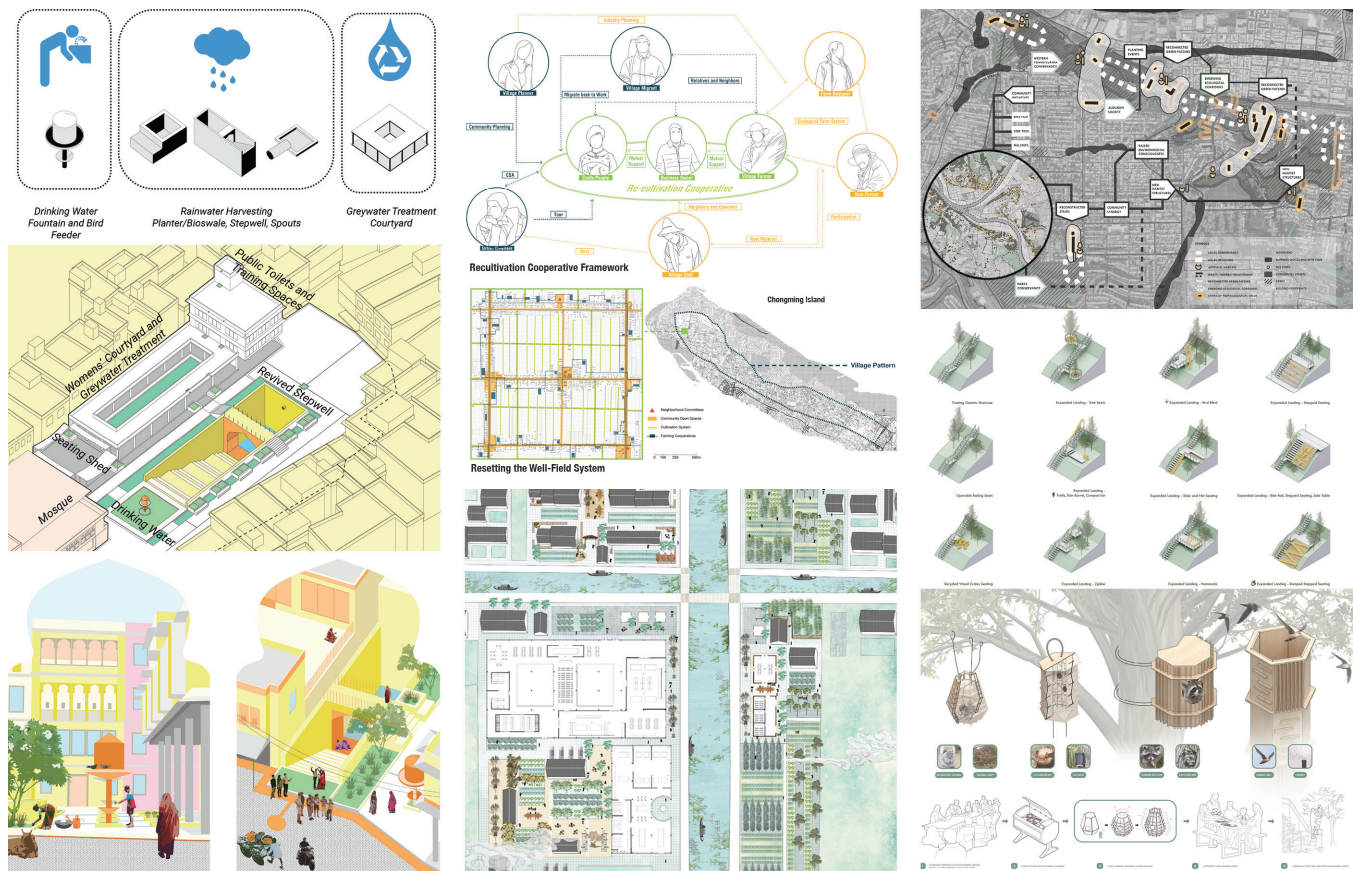


Figure 4. Yashasvi Tulchiya, Cultural Landscape: Everyday Lives for Water (left), Xiaoran Zhang, Chongming Recultivation (center), Veronica Wang, Synanthropolis - Commons for More than Humans (right). All three thesis projects propose shared landscape infrastructures and ecological systems.

hydrological systems legible. Her project built on the case of *Tiratna Prerana Mandal*, in Mumbai, India, a community based organization that operates and manages community toilets paired with classroom space and educational programming in low-income informal communities.²⁷

Xiaoran Zhang's thesis for China's Chongming Island explored how historic shared agricultural practices in the *well-field* system of agricultural villages, farmland and canals could be resuscitated by introducing a network of cooperatively owned spaces of living and working. The project focused on vacancy created by migration out of the village and sought to attract residents and visitors back to the island from nearby Shanghai, with the larger goal of supporting localized sustainable food systems by teaching craft, culinary and agricultural skills and creating new spaces for their practice. Xiaoran's project was inspired by our study of *R-Urban* in Colombes, France where a network of urban agriculture interventions promote local production and consumption cycles.²⁸

Veronica Wang's project explored ways in which urban ecosystems might be shared more deliberately with synanthropic urban wildlife species. The project focused on the wooded

hillsides of Pittsburgh, Pennsylvania where a network of public pedestrian staircases traverses steep hillsides with remnants of interior forest. Veronica proposed both improvements to the stairs allowing users to spend time in the woods, and a kit of parts for creating animal nests. She also proposed a new coalition connecting existing advocates of habitat restoration, urban forest canopy and parks management with community based advocates for preserving and maintaining the urban stair infrastructure. Veronica's work built on projects exploring architecture's role in producing synanthropic habitats by Joyce Hwang and Sarah Gunawan.²⁹

This group of projects explore how ecological, infrastructural and agricultural systems might be produced, maintained and managed in ways that better integrate and support bottom-up community actors who use them, while advancing broader agendas for responding to anthropogenic climate change. The projects use methods of landscape and infrastructure design, but also consider how urban design can help make these systems legible and accessible at the community scale.

ADVANCING SYSTEMS OF SHARED OWNERSHIP AND

PRODUCTION

Lastly, a number of thesis efforts have focused directly on the creation of new systems of shared ownership and production, seeking to redesign economic and regulatory mechanisms of the social contract in order to respond to both climate change and forces of urban gentrification. Schuyler McAuliffe's thesis engaged with Western Pennsylvania's long history of carbon extraction and its entanglement with urban form.³⁰ His thesis proposed a new cooperative organization pairing the production of solar energy infrastructures with the creation of permanently affordable cooperative housing communities served by the existing transit networks of Pittsburgh, Pennsylvania. Schuyler's project utilized the *2000-watt society* as organizing urban design metric for identifying potential sites, organizing shared living spaces and designing high performance envelopes, with the goal of enabling cooperative residents to stay below an average threshold of 2,000 watts per person per day.³¹ The project also explored how cooperative ownership structures might incorporate both income streams from energy generation and forms of shared value capture intended for future expansion, inspired by the case of the *Mietshäuser*

Syndikat an expanding European network of housing cooperatives based in Germany.³²

Sharleen Devjani's thesis also proposed a strategy for addressing urban housing affordability and climate change, in her case focusing on the risk of displacement in the areas of Miami, Florida where flood risk is lowest and climate induced gentrification is therefore likely. Her project proposed expanding an existing community land trust to serve the Little Haiti community, while also modifying both zoning and existing public-private financing tools to simultaneously expand development capacity and create permanently affordable housing. Her work leveraged methods of typological capacity testing, zoning rule creation and architectural strategies for mitigating flood risk, and paired them with policy and ownership regimes to support affordability. The work was inspired by cases of wholistic community land trusts such as the *Dudley Street Neighborhood Initiative* in Roxbury, Massachusetts.³³

A final project by Paul Greenway explored how a cooperative structure for living and working in Barcelona, Spain, might capture and repurpose demolition waste streams and

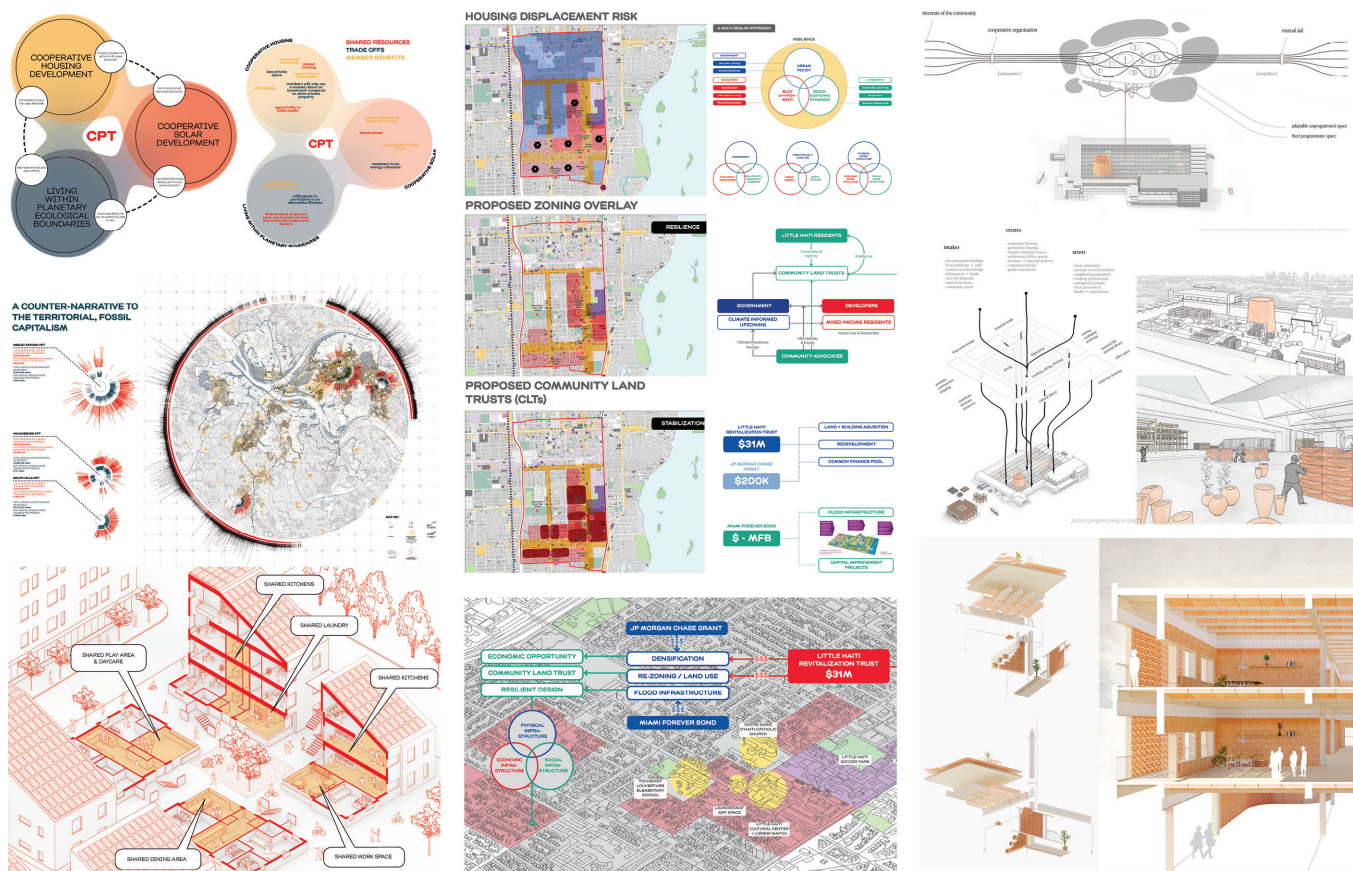


Figure 5. Schuyler McAuliffe, *The Shape of Power - The Community Power Trust* (left), Sharleen Devjani, *Mitigating Climate Change Gentrification in Little Haiti, Miami Fl* (center), Paul Greenway, *circular industry center*. These three thesis projects focus on designing systems of shared ownership and production.

produce new affordable housing using the underutilized vacant ENMASA factory complex in the city's industrial Bon Pastor neighborhood which is experiencing both demolition and rising housing costs. Paul's project explored how circular material cycles, vernacular ceramic building techniques and participatory construction could create both employment and housing. His work was inspired by community controlled affordable housing cooperative examples integrating participatory construction such as the *Covivema 5* in Montevideo, Uruguay and the *UHAB* program in New York.³⁴

CONCLUSION

Urban design academia is well versed in calling out, mapping, revealing and lamenting the effects neoliberalism has wrought on cities and communities. However, at times the discipline struggles to balance criticality with credible strategies for action. The diversity of both the case studies and the thesis projects in the studio illustrate the potential flexibility and breadth of organizing urban design agency and methods around supporting commoning processes. While this framework may not be useful for all situations, we believe it can serve as a useful lens for organizing urban design goals and the application of design methods. Rather than conceptualizing urban design's agency as means of harnessing or priming market forces with the hope of extracting a modicum of surplus public benefit, a focus on commoning reorients urban design agency around producing, preserving and growing shared resources. It harnesses urban design methods to support this process, tailoring them to respond to the specific ecological, economic, and political entanglements of a given milieu. This approach requires a relational focus on actor networks and organizations, and marshals design to support the fundamentally social process of negotiating and managing shared resources. It also demands that urban design engage with systems of regulation, ownership, value capture, and production to create and support common resource pools.

The majority of the methods discussed here are not novel, nor is the notion of organizing urban design agency around issues of climate change and inequity. After five and half years of running the studio we feel that commoning offers one possible productive framework for advancing the discipline.

ACKNOWLEDGEMENTS

The Commoning the City Studio is a collaboration between myself and Associate Professor Stefan Gruber, who brought the focus on commoning to Carnegie Mellon. Professor Gruber led the conceptualizing of the studio and framing of the case study research in *An Atlas of Commoning*. The research would not be possible without the many project participants who have shared their efforts. The larger Atlas project is a collaboration with Arch+ in Berlin and the exhibition has been supported by ifa. Finally, this paper would not be possible without the willingness of our students to explore a different way of thinking about urban design.

ENDNOTES

1. Neil Brenner and Nik Theodore, "Cities and the Geographies of Actually Existing Neoliberalism" In *Critique of Urbanization: Selected Essays*, (Basel: Birkhauser, 2017), 42-43.
2. Brenda Case Scheer, *The Evolution of Urban Form - Typology for Planners and Architects*, (New York: Routledge, 2010); Jan Gehl, *Cities for People*, (Washington, DC: Island Press, 2014); Charles Waldheim, *Landscape as Urbanism: A General Theory*, (Princeton: Princeton University Press, 2016); Alex Lehnerer, *Grand Urban Rules*, (Rotterdam: 010 Publisher, 2009).
3. David Bollier and Silke Helfrich eds. *The Wealth of the Commons: A World Beyond Market & State*, (Amherst: Levellers Press, 2012).
4. Christian Hiller and Stefan Gruber, *An Atlas of Commoning: Places of Collective Production*, English version, (Aachen: ARCH+, 2018).
5. For a succinct summary of contemporary modes of urban design practice see: Alex Krieger, "Where and How Does Urban Design Happen?," in *Urban Design*, ed. Alex Krieger and William S. Saunders, (Minneapolis: University of Minnesota Press, 2009), 113-130.
6. The exhibition and book *Cities X Lines* from 2006 offer a synthetic snapshot of the urban design discipline as it entered the twenty-first century. Joan Busquets and Felipe Correa, *Cities X Lines: a New Lens for the Urbanistic Project*, (Cambridge, Mass: Harvard Graduate School of Design, 2006).
7. For a summary of the history and evolution of typo-morphological methods and their normative use in contemporary urban design and planning practice see: Brenda Case Scheer, *The Evolution of Urban Form - Typology for Planners and Architects*, (New York: Routledge, 2010).
8. Jan Gehl's recent books offer a synthesis of urban design methods grounded in observational research, perception and behavior. Jan Gehl, *Cities for People*, (Washington, DC: Island Press, 2014); and Jan Gehl and Birgitte Svarre, *How to Study Public Life*, (Washington, DC: Island Press, 2013).
9. A reassertion of the importance of ecological planning methods and landscape architecture to the discipline dominated discourse in urban design during the first decade of the twenty-first century. See: Charles Waldheim, *Landscape as Urbanism: A General Theory*, (Princeton: Princeton University Press, 2016); and Gareth Doherty and Mohsen Mostafavi eds., *Ecological Urbanism*, (Baden, Switzerland: Lars Müller, 2010). In parallel to the rise of landscape urbanism, the discipline developed a wide range of urban sustainability performance metrics in the last two decades. See: Sylvie Albert and Manish Pandey eds., *Performance Metrics for Sustainable Cities*, (New York: Routledge, 2022).
10. In recent decades The Congress for New Urbanism and other practitioners have focused on reforming a variety of regulatory mechanisms shaping contemporary urban development. Some efforts have focused on advancing form-based zoning methods, while others have sought to reform standards and practices around roadway and transportation design. For a discussion of form based codes see: Daniel G. Parolek, Paul C. Crawford, and Karen. Parolek, *Form-Based Codes: a Guide for Planners, Urban Designers, Municipalities, and Developers*, (Hoboken, N.J.: J. Wiley & Sons, 2008). For a discussion of roadway design reform efforts see: Janette Sadik-Khan and Seth Solomonow, *Streetsight: Handbook for an Urban Revolution*, (New York: Viking, 2016). For a more abstract and broad summary of the history and design of urban regulatory regimes see: Alex Lehnerer, *Grand Urban Rules*, (Rotterdam: 010 Publisher, 2009).
11. For a summary of the community design movement and use of participatory methods, see: Henry Sanoff, *Community Participation Methods in Design and Planning*, (New York: J. Wiley & Sons, 2000).
12. David Harvey, *A Brief History of Neoliberalism* (Oxford: Oxford University Press, 2005), 64-70.
13. Neil Brenner and Nik Theodore argue that "actually existing neoliberalism" has "been highly uneven, both socially and geographically, and its institutional forms and sociopolitical consequences have varied significantly across spatial scales and among each of the major zones of the world economy." Neil Brenner and Nik Theodore, "Cities and the Geographies of Actually Existing Neoliberalism" In *Critique of Urbanization: Selected Essays* (Basel: Birkhauser, 2017), 42-43.
14. For a discussion of neoliberalism and value extraction see: Rachel Weber, "Extracting Value from the City: Neoliberalism and Urban Redevelopment." In *Spaces of Neoliberalism Urban Restructuring in North America and Western Europe*, ed. Neil Brenner and Nik Theodore (Malden: Blackwell, 2002) 172-193. For a discussion of the financialization of development mechanisms in American cities see: Rachel Weber, "Selling City Futures: The Financialization of Urban Redevelopment Policy." *Economic geography* 86, no. 3 (2010): 251-274.
15. David Harvey, *Rebel Cities: from the Right to the City to the Urban Revolution*, (London: Verso, 2019), xv-xvi.
16. Kevin Lynch's attempt at defining an explicitly normative overarching set of dimensions of performance for "good city form" offers a instructive illustration of the discipline's contemporary conundrum. In

- producing or reorganizing a fragment of the contemporary city, urban design is often successful at meeting a number of Lynch's dimensions of performance, that while dated, are arguably still relevant to much practice. A typical urban design project may achieve vitality through the mixing of uses and the design of public space, effectively shape access through the organization of public space networks, produce a good fit through the study of culture and behavior, and achieve efficiency by optimizing infrastructures, buildings and resource cycles. However, neoliberal development practices have a strong tendency to overwhelm at least two out seven of Lynch's performance criteria: control and justice. While neither the term commoning, nor the right to the city is mentioned, Lynch's discussion of control, his focus on ownership, access, territorial definition, management and change of space over time, is particularly relevant to the application of urban design methods discussed in this paper. Kevin Lynch, *A Theory of Good City Form*. (Cambridge: MIT Press, 1981), 205-220.
17. David Harvey and many others see both social movements and civil society projects focused on urban space as evidence of commoning flourishing despite the hegemony of neoliberal capitalism. "Even the idea that the city might function as a collective body politic, a site from which progressive social movements might emulate, appears, at least on the surface, increasingly implausible. Yet there are in fact all manner of urban social movements in evidence seeking to overcome the isolations and reshape the city in a different social image from that given by the powers of developers backed by finance, capital, and increasingly entrepreneurially minded local state apparatuses." Harvey, *Rebel Cities: from the Right to the City to the Urban Revolution*, 15-16.
 18. Christian Hiller and Stefan Gruber, *An Atlas of Commoning: Places of Collective Production*, English version, (Aachen: ARCH+, 2018) 1. Our approach to commoning builds on a number of other authors. Also see: David Bollier and Silke Helfrich eds. *The Wealth of the Commons: A World Beyond Market & State*, (Amherst: Levellers Press, 2012); Stavros Stavrides, *Common Space: The City as Commons*, (London: Zed Books, 2016); David Bollier and Silke Helfrich eds. *Free, Fair and Alive - The Insurgent Power of the Commons*, (Gabriola: New Society Publishers, 2019); Massimo De Angelis, *Omnia Sunt Communia - On the Commons and the Transformation to Postcapitalism*, (London: Zed Books, 2017).
 19. As David Harvey puts it, the means to claiming the right to city is simple enough: "greater democratic control over the production and use of the surplus." David Harvey, *Rebel Cities: from the Right to the City to the Urban Revolution*, (London: Verso, 2019) 22-23. For a discussion of concrete commoning and economic strategies driving our studio approach see: J. K. Gibson-Graham, Jenny Cameron and Stephen Healy, *Take Back the Economy - An Ethical Guide for Transforming Our Communities*, (Minneapolis: University of Minnesota Press, 2013).
 20. Our approach combines theories of commoning with a transition design framework. Rather than formulating neoliberal capitalism as a space of total enclosure, it instead seeks to advance a multitude of experiments that can help society transition towards new and resuscitated forms of resource sharing. See: "A Commons Transition Primer," P2P Foundation, last accessed October 8, 2022, <https://primer.commonstransition.org/>.
 21. Case-study research trips have included visits to Berlin, Zurich, Vienna, Buenos Aires and Montevideo. Additional case studies have explored projects in China, Columbia, France, Greece, India, Japan, the Netherlands, Palestine, the United Kingdom and the United States.
 22. The exhibition *An Atlas of Commoning* was curated by Anh-Linh Ngo, Mirko Gatti, Christian Hiller, Max Kaldenhoff, Christine Rüb (ARCH+), Elke aus dem Moore (ifa), and Stefan Gruber (CMU), with research by Carnegie Mellon University School of Architecture and TU Berlin, Institute of Architecture, Prof. Rainer Hehl. The Institut für Auslandsbeziehungen (ifa) sponsored exhibition continues to travel and was most recently shown at the MARQ. Museum of Architecture and Design in Buenos Aires. Case-study research from the studio is continuously added to a library display wall as new work is done for the region in which the show is up. Our current 2022/23 studio traveled to Buenos Aires and Montevideo to support the exhibition and conduct case-study research and workshops.
 23. In his classic text on planning theory John Friedmann frames three modalities of planning: allocative, innovative, and radical, with the latter focusing on systems transformation and often overlapping with bottom-up civil society action. See: John Friedmann, *Planning in the Public Domain From Knowledge to Action*, (Princeton: Princeton University Press, 1987). More recent design theory has developed the concept of designing for societal transitions. See: Terry Irwin, Gideon Kossoff, and Cameron Tonkinwise, "Transition Design Provocation." *Design philosophy papers* 13, no. 1 (2015): 3-11. This approach is also discussed in: Arturo Escobar, *Designs for the Pluriverse - Radical Interdependence, Autonomy, and the Making of Worlds*. (Durham: Duke University Press, 2017)
 24. Mehr Als Wohnen (More Than Living) is a mixed-use cooperative district in Zurich, Switzerland. It is planned to have 450 units of housing of different sizes and tenure types and levels of affordability. It also integrates a range of retail and community uses. The master plan created by the Duplex Architekten and FuturaFrosch uses a strategy of creating larger than normal build-to-massing envelopes accompanied by a set of rules focused on subtraction, shared use distribution and open space relationships. Duplex also designed House A which clusters small units on each floor around a linked set of shared spaces. See: "MORE THAN LIVING. ZÜRICH 2009-2015," Duplex Architekten, last accessed October 8, 2022, <https://duplex-architekten.swiss/en/#/en/projects/more-than-living/> See also: "Hunziker Areal - planning and architecture," Mehr Als Wohnen, last accessed October 8, 2022, <https://www.mehralswohnen.ch/dokumente/>
 25. The Kalkbreite Cooperative Zollhaus project is a three building mixed-use cooperative. In the Hallenwohnen section of the building residents are able to reconfigure two level living areas with a reconfigurable kit of parts, allowing the larger space to function as studio and workspace. "Zollhaus residential and commercial development, Zurich, 1st prize, 2015-2021" Enzman and fisherman, last accessed October 8th, 2022, https://www.enzmannfischer.ch/?project_id=101 See also: "Modular Residential Towers with Changing Views", last accessed October 8th, 2022, <https://www.modulart.ch/modulare-wohntuerme-mit-wechselder-aussicht/>
 26. "Sweetwater Foundation", last accessed October 8th, 2022, <https://www.sweetwaterfoundation.com/> "Granby Workshop, last accessed October 8th, 2022, <https://granbyworkshop.co.uk/>
 27. "Triratna Prerana Mandal", last accessed October 8th, 2022, <https://www.facebook.com/triratnapreranamandal/>
 28. "R-Urban is a bottom-up strategy that explores the possibilities of enhancing the capacity of urban resilience by introducing a network of resident-run facilities to create complementarities between key fields of activity (economy, housing, urban agriculture, culture). R-Urban initiates locally closed ecological cycles that will support the emergence of alternative models of living, producing and consuming between the urban and the rural." See: "R-Urban," Atelier d'Architecture Autogérée, last accessed October 8th, 2022, <http://r-urban.net/en/>
 29. Joyce Hwang's various projects for species habitats can be found at Ants of the Prairie, last accessed October 8th, 2022, <https://www.antsoftheprairie.com/> Sarah Gunawan's Synanthropic Suburbia is a University of Waterloo thesis project from 2015. See: "Synanthropic Suburbia," Sarah Gunawan, UWSpace, last accessed October 8th, 2022, <http://hdl.handle.net/10012/9765>
 30. See: Elisa Iturbe, "Architecture and the Death of Carbon Modernity" Log 47: Overcoming Carbon Form, Ed. Elisa Iturbe, (New York: Anyone Corporation, 2019).
 31. "2000 watt society - One target, Our Community, Stepping-Up Now", last accessed October 8th, 2022, <https://www.2000-watt-society.org/>
 32. "Mietshäuser Syndikat," last accessed October 8th, 2022, <https://www.syndikat.org/en/>
 33. DSNI is a community land trust in Roxbury. "Dudley Street Neighborhood Initiative," last accessed October 8th, 2022, <https://www.dsni.org/>
 34. Covivema 5 is a nine-story multifamily housing cooperative in Montevideo by architects Lily Boreli, Teresa Buroni, & Raúl Carneiro. Completed in 2018 it was partially built using resident labor as a form of equity investment. A discussion of the project can be found in: Benjamin Nahoum, "Social housing- common needs, common paths and common difficulties. The Uruguayan experience" *Habitat and Society* 14 (2021): 207-221. UHAB is an organization created to facilitate the creation of affordable housing cooperatives in New York City. "UHAB - Building Community-Controlled Affordable Housing Through Cooperation" last accessed October 8th, 2022, <https://www.uhab.org/>