Architecture Between Commodification and Community: Navigating the Margins of Institutionalized Capitalism

by

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A thesis
presented to the University of Waterloo
in fufillment of the
thesis requirement for the degree of
Master of Architecture

Waterloo , Ontario, Canada, 2025
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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

To my family,
Your love and unwavering support have made anything possible.

Acknowledgements

I would first like to acknowledge that the University of Waterloo, along with its work and adjacent communities, is located on the traditional territory of the Neutral, Anishinaabeg, and Haudenosaunee peoples. They are situated on the Haldimand Tract, the land granted to the Six Nations, which includes six miles on either side of the Grand River. As I work, study, and engage with this space, I am honoured and privileged to be able to operate on these lands.

This thesis would not have been possible without the support, guidance, and encouragement of many individuals at the University of Waterloo School of Architecture. I am deeply grateful to everyone who has shaped this research and my academic journey.

First and foremost, I would like to extend my deepest gratitude to my supervisor, Jaliya Fonseka, for his kindness, insight, and mentorship. Your unwavering support, patience, and guidance have strengthened how I approach and see my work and will carry with me beyond my academics.

I would also like to sincerely thank my committee member, Maya Przybylski, for your thoughtful critique and accommodations. Your encouragement and geniality have made this process flow better while keeping me grounded and engaged in my work.

I thank Rick Haldenby for retelling the story of how the School of Architecture came to be. I hope that the school one day re-approaches the ambitious and inventive nature of the previous locations.

Furthermore, I extend my thanks to the many community members and individuals who helped me through this process. To Mano Duggal from Phidon Pens, Elisia Neves and Oliver Markovski from Fabrik Architects, Max Shiffman, Harvey Ried, Zach Fish, and the City of Cambridge, thank you for the thoughtful discussions and perspectives on community engagement and development.

The past half-decade at the University of Waterloo School of Architecture has been transformative. It has challenged me to engage with things that once made me irrationally uncomfortable. This personal growth could not have been done without the support of my family, friends, and mentors, all of whom have been uplifting and encouraging in times of overwhelming dread. The memories I have formed and the relationships I have built continue to stand as a cornerstone of my identity. Thank you!

Abstract

As a professional practice and educational framework, architecture has been intertwined with nuanced capitalist systems prioritizing rigid hierarchies, production, and commodification over social agency and spatial adaptability. This thesis critically examines how pedagogy and practice can reinforce these instances of institutionalized capitalism, leading to the marginalization of people and their spaces. However, rather than viewing the margins as sites of exclusion, this study aims to reframe them as spaces of resistance, adaptability, and evolution. The research identifies three areas of interest based on Henri Lefebvre's concepts of spatial production: the social, the physical, and the mental. And in doing so, it intends to do the following. The Social: Deconstruct institutionalized frameworks and reveal ways in which networks of actors continuously shape the built environment. The Physical: Examine the influence of static perceptions of architecture and its effect on the comprehension of space, built forms, and the processes of production. The Mental: Identify psychological perceptions of space, tendencies of control on spatial negotiations, and generational influence.

These categories will explore alternative modes of architectural thought and practice that inherently challenge capitalist institutionalization by disrupting established norms and standards: Actor-Network Theory (ANT), Architectural Appropriation, and Tactical Urbanism serve as key approaches for navigating the margins, providing methods to engage with space within and beyond institutional boundaries.

The University of Waterloo School of Architecture will act as a site of study, both spatially and socially, as it embodies an institution's structure while simultaneously attempting to resist its constraints. By applying these alternative theories, this thesis will promote a shift in institutionalized practices, enabling students to navigate and engage as both agents within the margins and participants within institutional frameworks. Furthermore, it underscores the potential and possibilities of operating within and across these spaces. In doing so, students can critically engage with and gain agency over their academic spaces while understanding its influence on community resilience. By mapping informal networks, understanding transient space, and experimenting with speculative interventions, a greater understanding of functional responses to institutionalized constraints can be established.

By prioritizing process over production, collaboration over hierarchy, and agency over prescription, these explorations argue that working within the margins, rather than assimilating into dominant systems, lends itself to a critical reorientation of one's existence within architectural pedagogy and practice. Furthermore, it grounds the architect's role as an active participant in spatial negotiation rather than a passive agent of capitalist production. Rather than attempting to dismantle capitalism, this work examines how it subtly shapes architectural theory and practice. It repositions the architect beyond institutional constraints, emphasizing agency in education and space while fostering a deeper understanding of networks and communities. By exploring alternative approaches to learning, occupying, and designing, it seeks ways to navigate and challenge capitalist structures without being confined by them. By viewing the margins as spaces of potential rather than exclusion, this thesis reimagines architectural education and practice as systems of informality, improvisation, and adaptability.

Preface

This thesis stems from my long-standing relationship with the University of Waterloo School of Architecture, spanning both my undergraduate and graduate experiences. In my early years, the building felt like more than just a place of study; it was a hub of gathering, collaboration, and creative exchange. The energy within its walls was palpable, not just in its design but in how students engaged with one another, making the space feel alive and deeply interconnected.

However, the COVID-19 pandemic, which occurred during my second year, disrupted this dynamic. Moving to online learning blurred the lines between work, life, and leisure, making it difficult to stay motivated within the confines of my bedroom "office." When in-person learning resumed, I became more intentional about separating these distinctions, spending extended hours at the school. Yet, as I immersed myself in the space again, I noticed a slow but significant decline in the vibrancy that once defined it.

The pandemic had left behind more than just temporary disruptions, it had created a lasting disconnect. Faculty and student turnover, the disappearance of clubs and initiatives, and a diminished engagement with hands-on learning reshaped the school's atmosphere. The work-from-home ethos seemed to have carried over, leading students to operate in isolated bubbles, prioritizing polished deliverables over physical, immersive, and experiential design. Before the pandemic, the school was alive with installations, material experiments, and spatial interventions, transforming it into a dynamic learning environment. Likewise, there was a broader sense of community engagement, with student-led initiatives strengthening the relationship between the school and the city of Cambridge.

Witnessing the disappearance of these elements led me to question why this shift had occurred and what forces, both visible and invisible, had influenced it. The pandemic itself, which disrupted many global and local operations, could not have been the sole factor in creating this disconnect. My thesis began as an effort to understand the loss of this spatial and social quality, but it soon expanded into a broader investigation into the very processes through which we engage, participate, and learn within the school and its local context. Addressing these shifts requires not only an analysis of institutional structures but also a deeper understanding of student agency in shaping and sustaining the school's cultural and spatial identity.

My experiences in various roles, including serving as the Director of Coordination for BRIDGE, a student representative on the Space Committee, a Teaching Assistant, and an active community member, have given me a nuanced perspective on the interplay between administration, community-driven initiatives, and student engagement. These roles have provided critical insights into how spatial organization, policy, and institutional decision-making impact student life, enabling me to speak on the strategies needed to reconnect and reenergize our shared environment.

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Source: Drawing made by author

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Source: Light, Northern. "266 Royal York: 127M: 37s: Sevoy Developments: Arcadis." UrbanToronto, November 4, 2021. https://urbantoronto.ca/forum/threads/toronto-266-royal-york-127m-37s-sevoy-developments-arcadis.32991/.

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Source: Drawing made by author

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Source: "(46045) Posters, Pyramid of Capitalist System, Undated." Walter P. Reuther Library (46045) Posters, Pyramid of Capitalist System, Undated. Accessed February 27, 2025. https://reuther.wayne.edu/node/14904.

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Source: Britannica, T. Editors of Encyclopaedia. "Berlin Wall." Encyclopedia Britannica, December 18, 2024. https://www.britannica.com/topic/Berlin-Wall.

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Source: Drawing made by the author

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Source: Bourdieu, Pierre. Outline of a theory of Practice. Translated by Richard Nice. Cambridge: Cambridge Univ. Press, 2010.

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Source: Smith, Melissa. "Pessac: Stifled Alterations." aging modernism, August 20, 2010. https://agingmodernism.wordpress.com/2010/08/20/pessac-stifled-alterations/.

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Source: Lynch, Patrick. "Tezuka Architects' Fuji Kindergarten Wins 2017 Moriyama Raic International Prize." ArchDaily, September 20, 2017. https://www.archdaily.com/880027/tezuka-architects-fuji-kindergarten-wins-2017-moriyama-raic-international-prize.

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Source: Abdel, Hana. "Huebergass and District Park Bern Housing / GWJ Architektur + Ort AG Für Landschaftsarchitektur + Soziale Plastik." ArchDaily, November 13, 2024. https://www.archdaily.com/1023460/huebergass-and-district-park-bern-housing-gwj-architektur?ad_medium=gallery.

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Source: Fish, Zachary Christensen. "Opportunity in Absence: Activating Vacant Space in the Temporary City." Opportunity in Absence: Activating Vacant Space in The Temporary City. Thesis, University of Waterloo, 2015.

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Source: Fish, Zachary Christensen. "Opportunity in Absence: Activating Vacant Space in the Temporary City." Opportunity in Absence: Activating Vacant Space in The Temporary City. Thesis, University of Waterloo, 2015.

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Source: "About Mother Trees in the Forest." The Mother Tree Project, March 28, 2023. https://mothertreeproject.org/about-mother-trees-in-the-forest/.

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Source: Hernández, Mar. "Exposición 'estratos: Arqueología Del Tiempo' Mar Hernández." La Guía GO!, April 12, 2016. https://www.laguiago.com/eventos/exposicion-estratos-arqueologia-del-tiempo-mar-hernandez/.

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Source: Wigglesworth, Sarah. "The Disorder of the Dining Table." UOU scientific journal 4 (2022). https://doi.org/10.14198/uou.2022.4.12.

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Source: Drawing made by the author

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Source: Younglai, Rachelle. "Bank of Canada Rate Cuts Are Drawing Home Buyers Back to Variable-Rate Mortgages." The Globe and Mail, January 30, 2025. https://www.theglobeandmail.com/business/article-rate-cuts-are-drawing-home-buyers-back-to-variable-rate-mortgages/.

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Source: Boer, René, Marina Otero Verzier, Katía Truijen, and Johannes Schwartz. Architecture of appropriation: On squatting as spatial practice. Rotterdam: Het Nieuwe Instituut, 2019.

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author, image taken from: Vieira, Tuca, Paraisópolis, 2004, photograph, Tuca Vieira. Accessed February 28, 2025. https://www.tucavieira.com.br/paraisopolis?lang=en.

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Appleton, Andrea. “L.A.’s Ron Finley Wants to Make Gardening Gangsta.” Grist, April 7, 2021. https://grist.org/cities/la-ron-finley-wants-to-make-gardening-gangsta/.

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Source: Weston, Phoebe. “‘This Is No Damn Hobby’: The ‘gangsta Gardener’ Transforming Los Angeles.” The Guardian, April 28, 2020. https://www.theguardian.com/environment/2020/apr/28/ron-finley-gangsta-gardener-transforming-los-angeles.

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Source: Lucas, Maëlle, Vincent Gouëset, and Florent Demoraes. “Cycling in Bogotá during a Pandemic. the Influence of Tactical Urbanism and Perceived Insecurity on Bicycle Usage.” The Urban Book Series, November 17, 2023, 197–219. https://doi.org/10.1007/978-3-031-45308-3_9.

Figure 49 — P.75 Photograph of an informal “pop-up” bike repair station beside an informal bikeway.

Source: Lucas, Maëlle, Vincent Gouëset, and Florent Demoraes. “Cycling in Bogotá during a Pandemic. the Influence of Tactical Urbanism and Perceived Insecurity on Bicycle Usage.” The Urban Book Series, November 17, 2023, 197–219. https://doi.org/10.1007/978-3-031-45308-3_9.

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Drawing made by the author

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Source: Image taken and provided by Jaliya Fonseka

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Source: Image taken and provided by Jaliya Fonseka

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Source: Image taken and provided by Jaliya Fonseka

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Source: https://waterlooarchitecture.com/bridge/blog/2015/04/07/cambridge-common-exhibition/ Fonseka

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Source: https://waterlooarchitecture.com/bridge/blog/2013/09/09/roma-waterloo-architecture-rome-show-2013/ Image taken and provided by Jaliya Fonseka

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Source: Drawing made by the author

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Source: Image taken and provided by Jaliya Fonseka

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Source: Image taken and provided by Jaliya Fonseka

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Source: Gunawan, Sarah. “A Tour of Landscape Installations.” Bridge, July 23, 2013. https://waterlooarchitecture.com/bridge/blog/2013/07/22/a-tour-of-landscape-intallations/.

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Source: Gunawan, Sarah. “Another Visit to the Landscape Installations.” Bridge, August 6, 2013. https://waterlooarchitecture.com/bridge/blog/2013/08/05/another-visit-to-the-landscape-installations/.

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Source: Allman, Siobhan. “Planeterraeum: F_rmlab at Nuit Blanche 2014.” Bridge, January 27, 2015. https://waterlooarchitecture.com/bridge/blog/2015/01/26/planeterraeum-ontario-science-centre/.

Figure 73 — P.101 Student Installation “Slippage” for the design studio Contemporary Landscapes

Source: Gunawan, Sarah. “Another Visit to the Landscape Installations.” Bridge, August 6, 2013. https://waterlooarchitecture.com/bridge/blog/2013/08/05/another-visit-to-the-landscape-installations/.

Figure 74 — P.102 Proposed exterior interventions.

Source: Drawing made by the author

Figure 75 — P.105 Actor-Network Theory network diagram of the internal connections in the School of Architecture.

Source: Drawing made by the author

Figure 76 — P.106 Diagram illustrating the frequency of spatial occupation by students, community members, and staff of the first floor of the School of Architecture.

Source: Drawing made by the author

Figure 77 — P.108 Diagram illustrating the frequency of spatial occupation by students, community members, and staff of the second floor of the School of Architecture.

Source: Drawing made by the author

Figure 78 — P.110 Diagram illustrating the frequency of spatial occupation by students, community members, and staff of th thrid floor of the School of Architecture.

Source: Drawing made by the author

Figure 79 — P.113 Image of students participating in the annotation session of the school. Image taken by author

Source: Image taken by author

Figure 80 — P.113 Results of the annotation session, unfortunately some of the writting fadded following the study.

Source: Image taken by author

Figure 81 — P.115 Diagram transcribing student feedback for clarity. The first floor received a significant number of blue notes, suggesting minor improvements to space, programming, and existing elements. In contrast, the second floor has fewer comments, likely due to its primary function as a space for staff and faculty, with the library being the main student-accessible area. The third floor registers the highest concentration of concerns and challenges, which is notable given that students spend most of their time there.

Source: Drawing made by the author

Figure 82 — P.117 Thrid Floor Plan of the School of Architecture, highlighting loft space

Source: Drawing made by the author

Figure 83 — P.118 Diagram illustrating a catalouge of furniture used in the Loft

Source: Drawing made by the author

Figure 84 — P.119 Diagram illustrating the various use cases of the Loft

Source: Drawing made by the author

Figure 85 — P.121 Bathroom hook intervention.

Source: Drawing made by the author

Figure 86 — P.123 Caster wheel intervention for the tables located in the loft.

Source: Drawing made by the author

Figure 87 — P.125 Origami plywood box used as a model stand and deployable wall.

Source: Drawing made by the author

Figure 88 — P.127 Diagram illustrating current network opportunities.

Source: Drawing made by the author

Figure 89 — P.128 Mobile Kit consisting of origami boxes.

Source: Drawing made by the author

Figure 90 — P.129 Stages of deployment of the origami boxes.

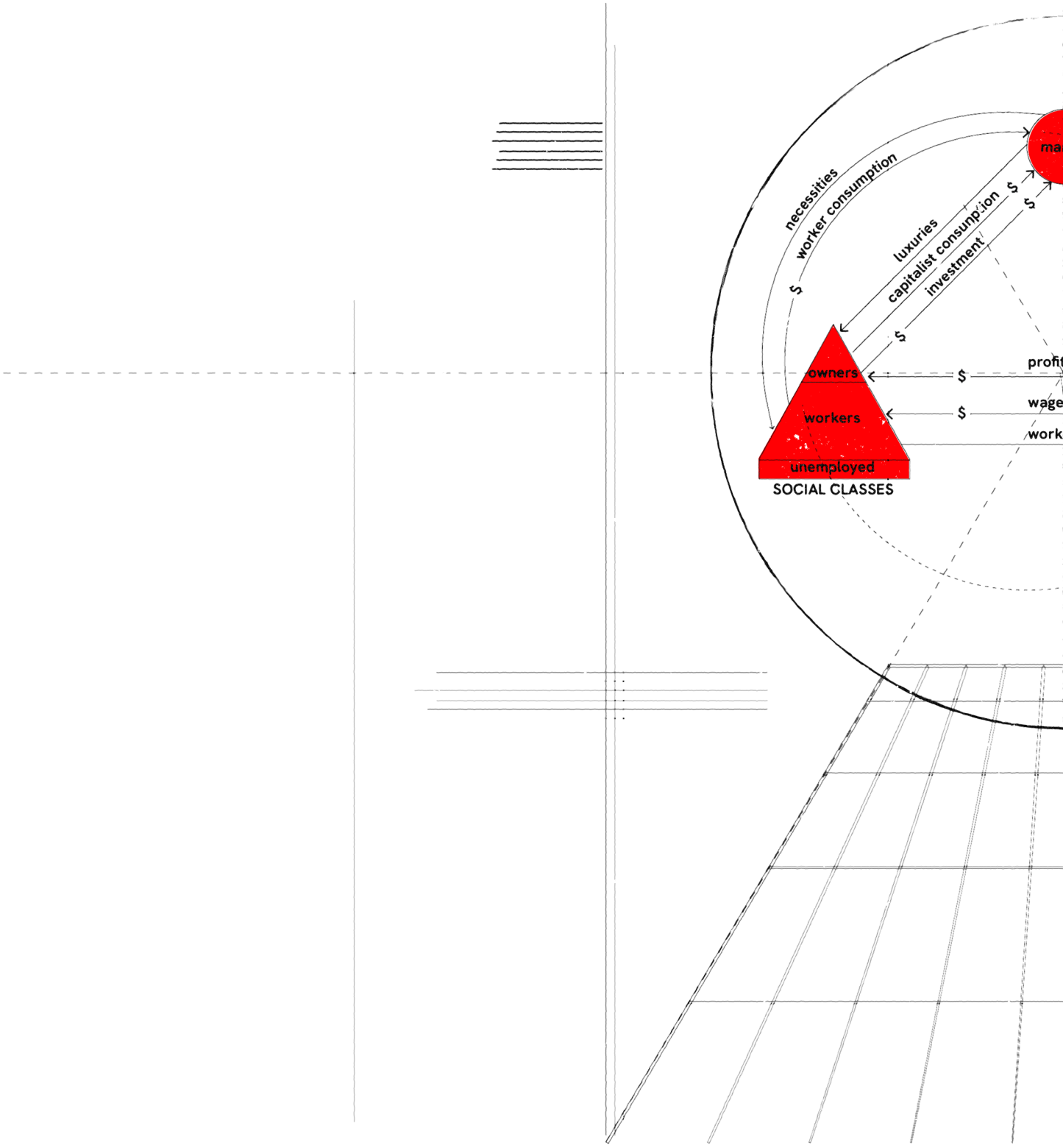
Source: Drawing made by the author

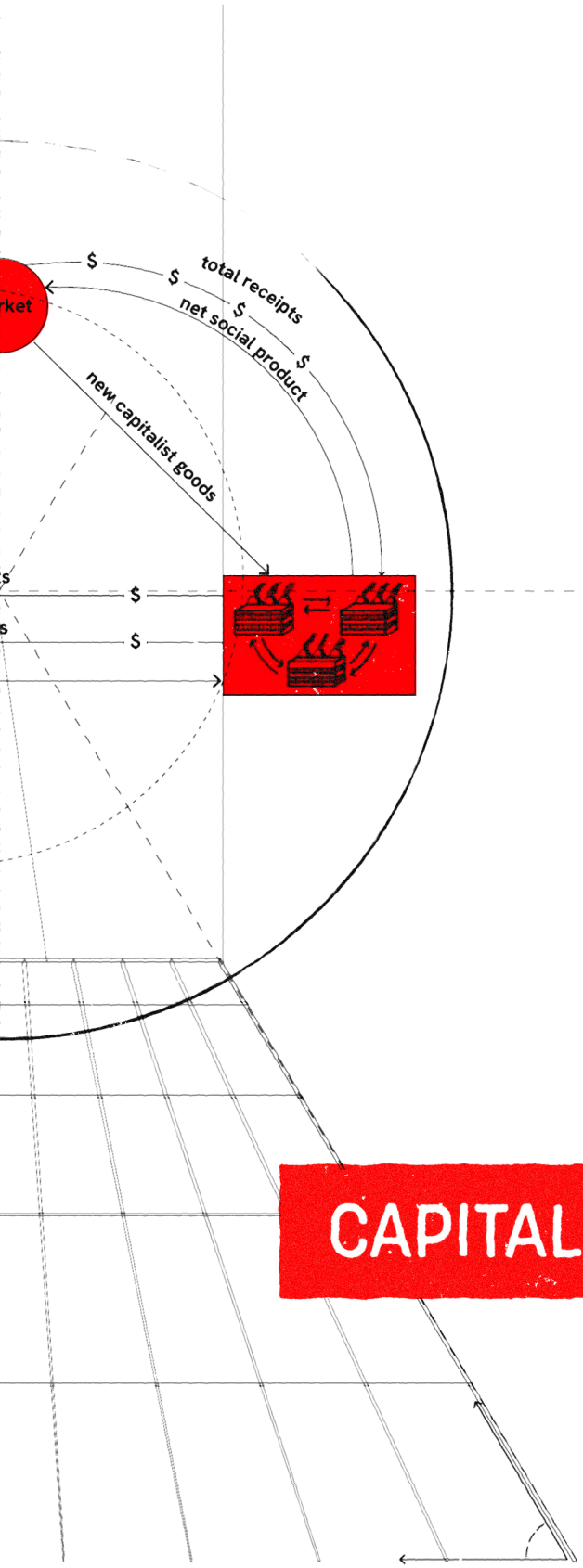
Figure 91 — P.130 Application of the mobile kit to a hypothetical vancant space situated on Main st.

Source: Drawing made by the author

Figure 92 — P.131 The set up process and the subsequent use for a lecture.

Source: Drawing made by the author


necessities
worker consumption
luxuries
capitalist consumption
investment
$
owners
workers
unemployed
SOCIAL CLASSES
profit
wage
work



INTRODUCTION

CAPITALISM

Introduction

Under capitalism's influences, architecture has the potential to be subjected to over-commodification, reducing the societal value of new and existing buildings, marginalizing communities and altering the overall practice into a tool for profit rather than a medium of social and spatial significance. These frameworks refer to the institutional, economic, and regulatory structures that dictate how architecture is conceived, produced, and accessed. They are shaped by institutionalization, which can be defined as an action that establishes something as a formal structure, convention, or norm, restricting individual agency and flexibility over space. This process can push marginalized groups into the periphery of design and, in doing so, limits their autonomy and access to adequate resources.

Although the margins of institutionalized space are often viewed as restrictive or undesirable, they offer a unique and potentially helpful condition. While operating outside institutionalized capitalist frameworks, these margins function as a grey area, or rather as informal spaces of resistance, allowing those outside the bounds to navigate and challenge the system that sidelined them. They provide instances of action that traditional institutions, intentionally or unintentionally bound by their own limitations, cannot accomplish. These informal movements are required when institutions fail to meet the needs of their users, whether in rural communities, urban centres, or educational settings. Disruptions to the system tend to emerge naturally, serving as catalysts for change and empowerment, with examples like the Black Lives Matter[1] movement, Forensic Architecture[2] or various student-led initiatives. Movements such as these demonstrate how collective action within the margins can contribute to the broader success of institutions, not as a system of control but as an assemblage of communities seeking change.

However, architecture's role within this capitalist institutionalization must be questioned (see Fig.1). Its inherent investment, production, and consumption processes can become normalized in contemporary society, impacting a community's overall systems of connection, formation, and placemaking, further entrenching individuals into the margins. Furthermore, its commodification impacts environmental sustainability and material understanding. By reducing architecture to a product, this puts more strain on the existing climate crisis and can sustain the improper extraction of resources from vulnerable peoples and land. These aspects of marginalization and exploitation can be traced back to the fifteenth and sixteenth centuries, deeply embedded in the foundation of architectural discourse and education. During this period, influential Italian architectural texts such as Architecttura and De Re Aedificatoria redefined the field, expanding its scope beyond construction into a strategic effort to elevate the profession in the eyes of influential benefactors.[3] Rooted in the notion of architecture as a tool for exerting control over both people and space, this perspective continues to shape the discipline today through capitalist institutionalization. Although contemporary practices have tried to challenge this legacy, the influence of nineteenth-century Eurocentric and post-colonial academia continues to shape architectural education, sustaining this mindset.[4] Such

1 The Editors of Encyclopaedia Britannica. “Black Lives Matter”. Encyclopedia Britannica, 10 Feb. 2025, https://www.britannica.com/topic/Black-Lives-Matter. Accessed 13 February 2025.

2 “Forensic Architecture.” Forensic Architecture. Accessed February 13, 2025. https://forensic-architecture.org/.

3 Bordeleau, Anne. “From the Ground up: Addressing Systemic Racism in Canada’s Architecture Schools.” Canadian Architect, February 1, 2021. https://www.canadianarchitect.com/from-the-ground-up-addressing-systemic-racism-in-canadas-architecture-schools/.

4 Ibid

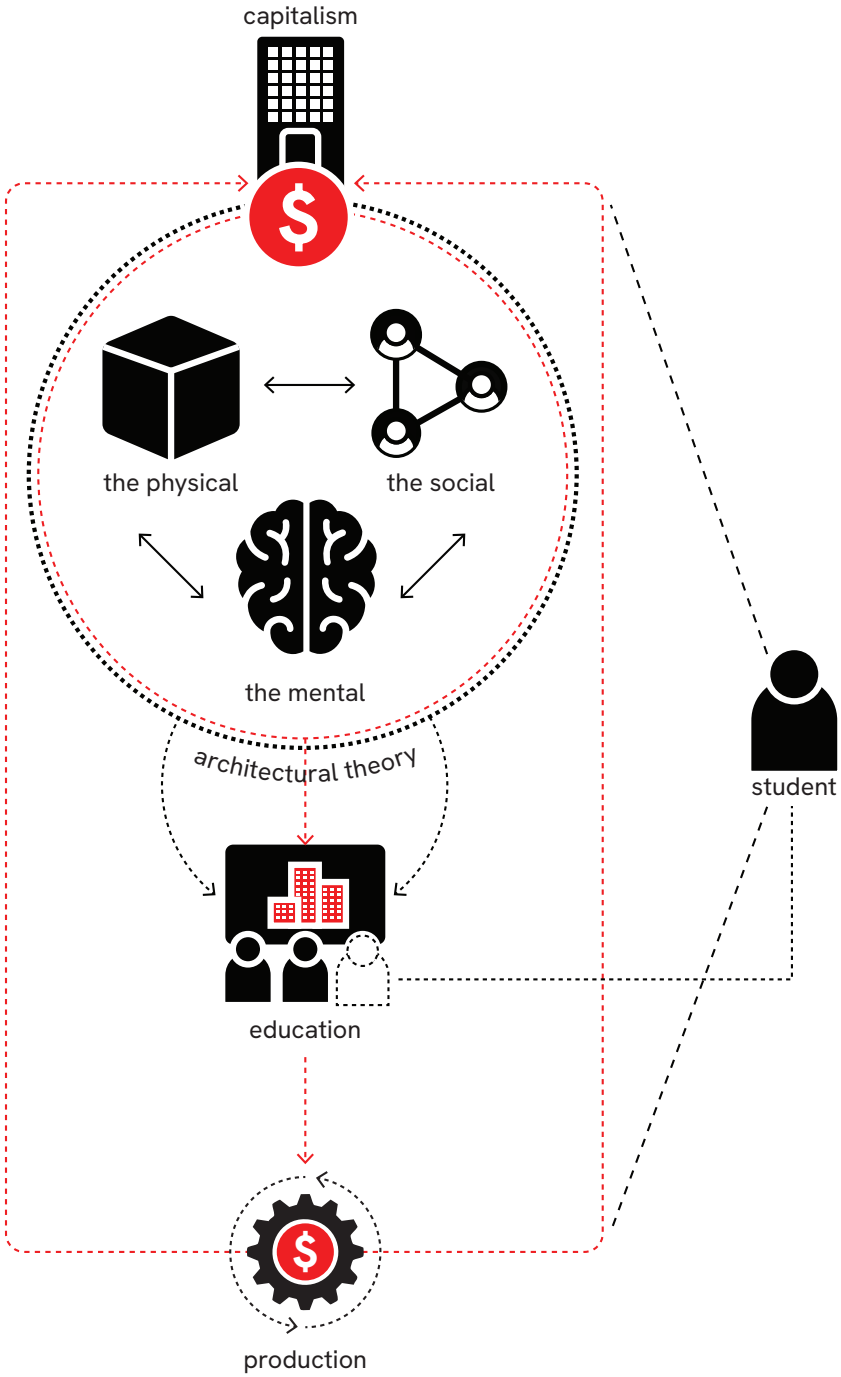


Figure 1: Diagram illustrating the relationship between capitalism and production. The nuanced nature of capitalist ideaolgies are instilled in the foundations of architectural theories. This perpetuates modes of production in design practices and eventually towards projects built in the real world, affecting both pedagogical and professional practice.

persistence is potentially reinforced by educators who themselves were taught within the same framework, perpetuating its impact across generations. The ingrained nature of institutionalized capitalism within education and, by extension, the profession continues to shape how space is understood and created. As a result, agency and navigation within the system become increasingly complex, particularly for those positioned at its margins, restricting access to the use, design, and construction of spaces. The interplay between institutionalized capitalist values, architecture, and marginalization raises two significant concerns:

The first concern addresses the institutions that educate future architects, as the theoretical framework of architecture, such as the social, physical, and psychological, can perpetuate broader capitalist ideals. Pedagogical practices often unknowingly reinforce capitalist systems, which have been deeply ingrained within architectural philosophies and theories and maintain the potential to sustain exploitative practices.

The second concern examines the role of designers themselves and how the emphasis on production, through physical buildings and labour, reinforces economic priorities, reducing architecture to a product rather than an evolving, socially responsive discipline.

Deconstructing The Concerns

In the book, *Design after Capitalism: Transforming Design Today for an Equitable Tomorrow*, Matthew Wizinsky, a designer and Associate Professor at the Taubman College of Architecture and Urban Planning, touches on these concerns while also noting the designer's role in defining usage:

> In the act of designing, designers identify 'users' and 'use-case scenarios,' creating idealized subjects and ways of being in the world. In this way, designers contribute to determinations about who has what kinds of agency and how those agencies are made possible— physically, symbolically, and experientially. At the same time, designers are often employed by others (their clients) to determine what is produced to achieve these ideals and how. This describes both sides of the political dimension of design: mediating the everyday lives of unknown others but typically doing so through the authority and financial support of their clients. Design alone cannot (and certainly does not) replace politics or economics or culture. Yet design is everywhere, and everywhere it is, it represents and enacts politics, economies, and cultures.[5]

Wizinsky's observations underscore the tension in architectural design between idealized visions and the financial realities imposed by clients, revealing the methods of control, determinant design, and the commodified nature of contemporary architectural practices (see Fig. 2). These dynamics can be drawn back to the education of architects, where post-secondary institutions have historically, following the Industrial Revolution, been known to prioritize production-based pedagogy. This instructional model involves students actively

5 Wizinsky, Matthew. *Design after capitalism: Transforming design Today for an equitable Tomorrow*. Cambridge, MA: The MIT Press, 2022.

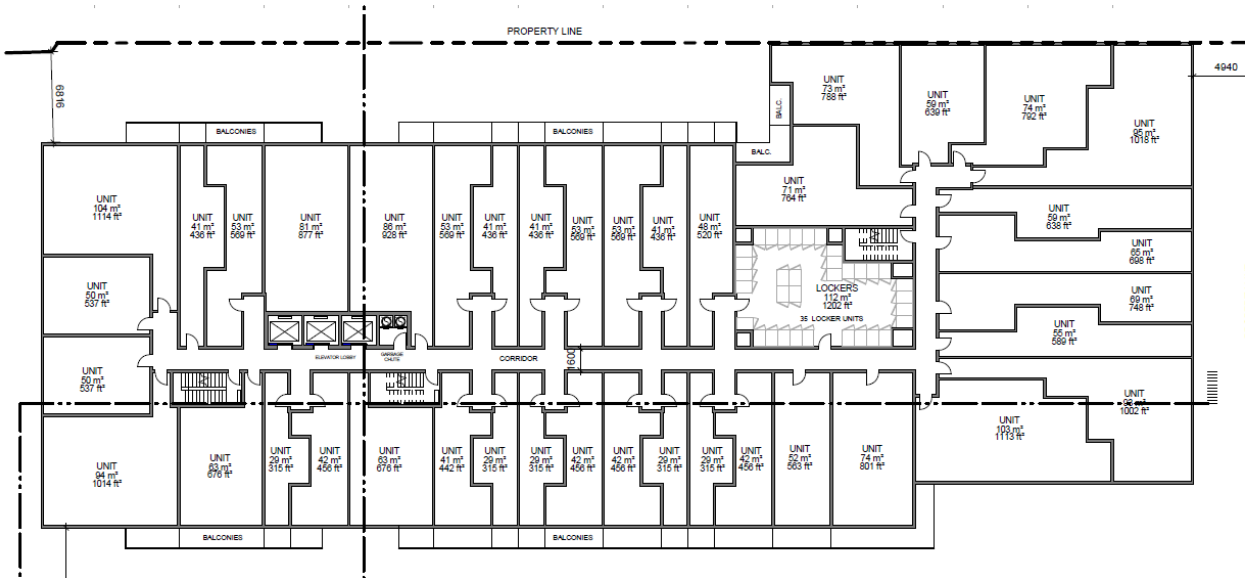


Figure 2: Urban Toronto (2022): A poorly designed condominium layout at 266 Royal York Rd Etobickoke. This plan drawing highlights the commodified approach towards architectural design, focusing on unit numbers rather than livable space. The building design has gone through a zoning ammendment and the property now includes 268 Royal York, giving the architects more area to work with. Since then, the plan layouts have improved drastically compared to the image above.

creating products (in this case, building design) to solve real-world problems over critical engagement with the broader implications of design. Although efforts have been made within education to re-orient the architect's role, capitalist systems persist in subtle ways, as noted in the first concern.

The emphasis on creating marketable outputs rather than fostering deeper, socially responsive thinking leads to questioning how architectural education can sustain and reinforce capitalist hierarchies. In this context, architecture becomes a tool to serve the interests of those in power, with education perpetuating those same economic and social systems. Wizinsky notes that "design enacts politics, economies, and cultures," and so does architectural education, shaping future architects to work within rather than challenge these frameworks.

William Mangold, an assistant professor in the Department of Architecture, Design & Urbanism at Drexel University, wrote in his paper *Money-tecture…Or How Architecture is Exploited by Capitalism*, offers a perspective that aligns in part with Wizinsky's critique of capitalism's impact on architecture, but he also introduces a contrasting view. While acknowledging capitalism's negative consequences, Mangold suggests that it can, in some ways, benefit architecture:

> In periods of investment, architecture and the role of architects expands rapidly. In these times, increased production may put greater demands on architects, but it has also generally meant greater opportunity to build and a greater diversity of buildings constructed. Likewise, slow periods of building have often been attributed to the strongest growth in academic and conceptual development in architecture. This view holds that interaction with capital—during boom and bust—is good for architecture as it progresses as a discipline and profession.[6]

Mangold highlights the dual nature of architecture's relationship with capitalism, indicating that a delicate balance between architecture and capitalism is essential to pushing the practice forward. Thus, issues and challenges arise when this balance is disrupted (see Fig. 3). While many actors are involved within this system, the most vulnerable are students, marginalized individuals, and their respective communities, as the scales typically lean in favour of capitalist interests of higher investment and production. This suggests that architects should move beyond serving capitalist interests and instead work toward reshaping spaces and systems in ways that better reflect society's needs and aspirations while acting as both mediators and advocates for the vulnerable. Wizinsky observes that "…capitalism is the primary ideological container for modern design practices."[7] While this concept holds validity in pushing the practice forward, there is a pressing need to imagine architecture beyond capitalism's constraints. This requires broadening its possibilities and moving past its exploitative and production-focused tendencies, which have been ingrained into design processes.

This investigation does not seek to judge capitalism as good or evil but rather to highlight

6 Mangold, William. “Money-tecture…Or How Architecture Is Exploited by Capitalism.” Essay. In *Where Do You Stand: 99th ACSA Annual Meeting, March 3-6, 2011, Montréal, Canada*, edited by Alberto Perez-Gomez, Annie Cormier , and Annie Pedret, 74–78. Washington, DC: ACSA Press, 2011.

7 Wizinsky, *Design after capitalism, 2022*

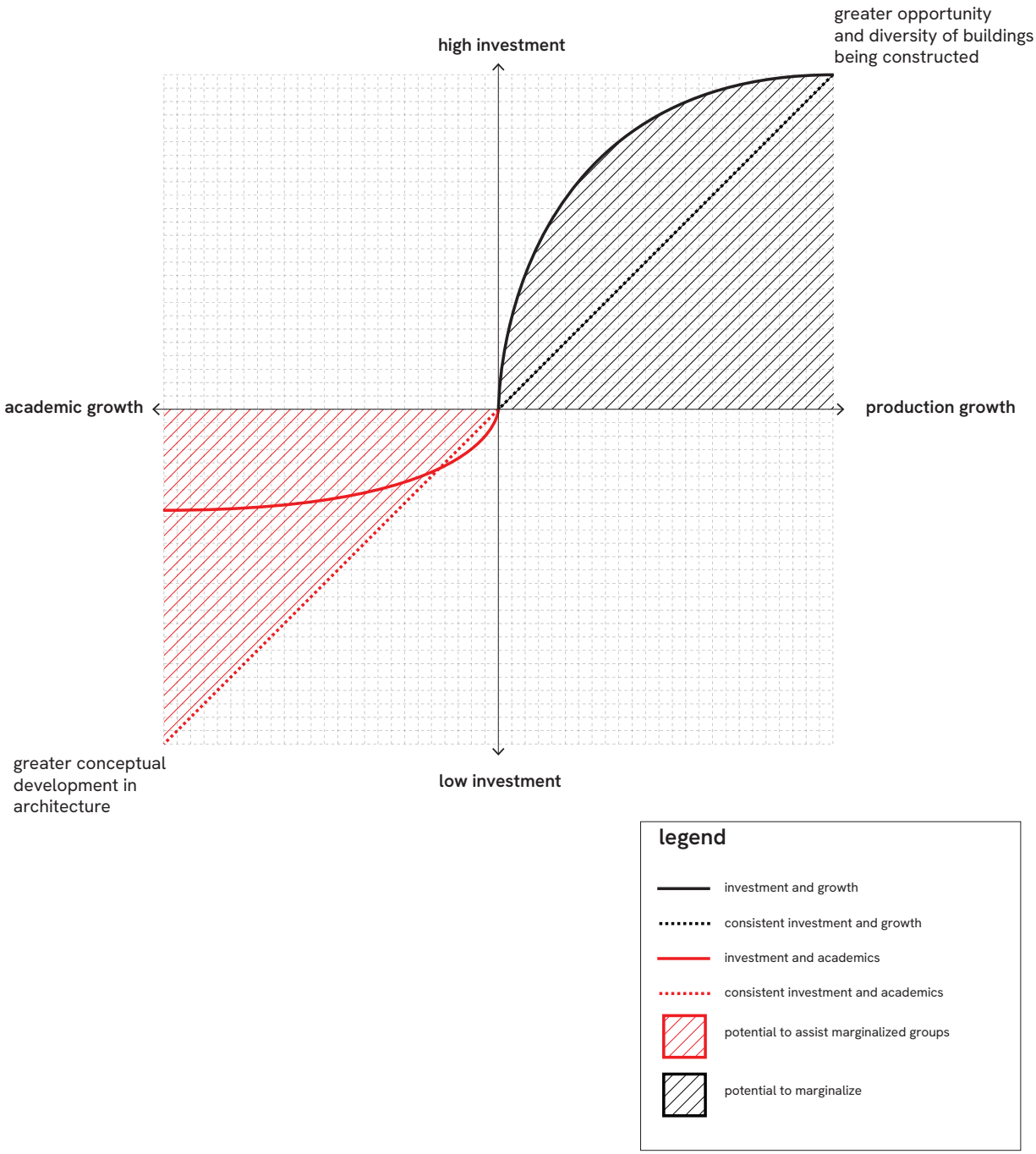


Figure 3: Diagram illustrating the relationship of architectural progression between periods of investment and its resultant affects on academic growth or growth of production.

its pervasive influence in our daily lives, deeply embedded in Western infrastructure, development, and livelihoods. With architecture's role shaping these sectors, the institutionalized capitalist frameworks implicit in the foundations of architectural education and practice threaten to maintain exploitative hierarchies and structures of the past. This thesis does not aim to dismantle capitalism or challenge its fundamental social, economic, and political roles; instead, it seeks to identify the nuanced ways in which it affects architectural theory and practice. In doing so, it looks to reframe the architect's role beyond the container of institutionalized capitalism, allowing architects and designers to understand and work from the margins or grey areas between the system's boundaries. From this, the thesis intends to reclaim educational and spatial agency, expand the understanding of community networks, and seek alternative ways of learning, occupying, and designing space while navigating the complexity of capitalist systems within the margins.

Understanding Capitalist Hierarchies

Before delving deeper into the subtlety of capitalist hierarchies and architectural frameworks, it is important to first understand and distinguish their many defining characteristics. Capitalism is an economic system characterized by private ownership of the means of production, where goods and services are produced for profit in a competitive market. This system operates on principles of capital accumulation, wage labour, voluntary exchange, and a price system determined by supply and demand. The primary objective within capitalism is the generation of profit, which drives innovation and economic growth.[8]

A fundamental feature of capitalism is its hierarchical class structure (see Fig. 4). In a simplified explanation, the top of the hierarchy are the capitalists, or bourgeoisie, who own and control the means of production, such as factories, land, and capital.[9] Below them are the workers, or proletariat, who do not own significant means of production and sell their labour to the capitalists in exchange for wages.[10] This relationship creates a dynamic where capitalists hold substantial economic power and control over resources. At the same time, workers have less autonomy and depend on wages for their livelihood, often leading to the concentration of wealth and power among those at the top, reinforcing existing social and economic inequalities.[11]

Moreover, the capitalist framework perpetuates systemic inequities through mechanisms such as commodification, where goods, services, and even labour are transformed into commodities for exchange.[12] Karl Marx, a notable German philosopher, theorist and socialist, highlights this process, arguing that commodification drives production to prioritize market exchange over intrinsic or societal value.[13] These characteristics of capitalism influence various sectors, shaping decision-making processes, resource allocation, and the valuation of labour.[14]

Understanding these fundamental principles of capitalism is essential for analyzing how these frameworks and hierarchies can manifest in architectural facets. The ideas of hierarchy,

8 Smith, Adam, 1723-1790. An Inquiry into the Nature and Causes of the Wealth of Nations. New York: Modern Library, 1994..

9 Marx, Karl, and Friedrich Engels. The Communist Manifesto. London: Penguin Books, 2015.

10 Marx, Karl. Das Kapital: A Critique of Political Economy. Washington, D.C.: Eagle, 1996..

11 Piketty, Thomas, and Arthur Goldhammer. Capital in the twenty-first century. London, England: The Belknap Press of Harvard University Press, 2017.

12 Harvey, David. A brief history of neoliberalism, September 22, 2005. https://doi.org/10.1093/oso/9780199283262.001.0001.

13 Karl Marx, *Das Kapital*, Volume I, Chapter 1, Section 4

14 Tafuri, Manfredo. Architecture and utopia: Design and capitalist development. Translated by Barbara La Penta. Cambridge: MIT Press, 1977.

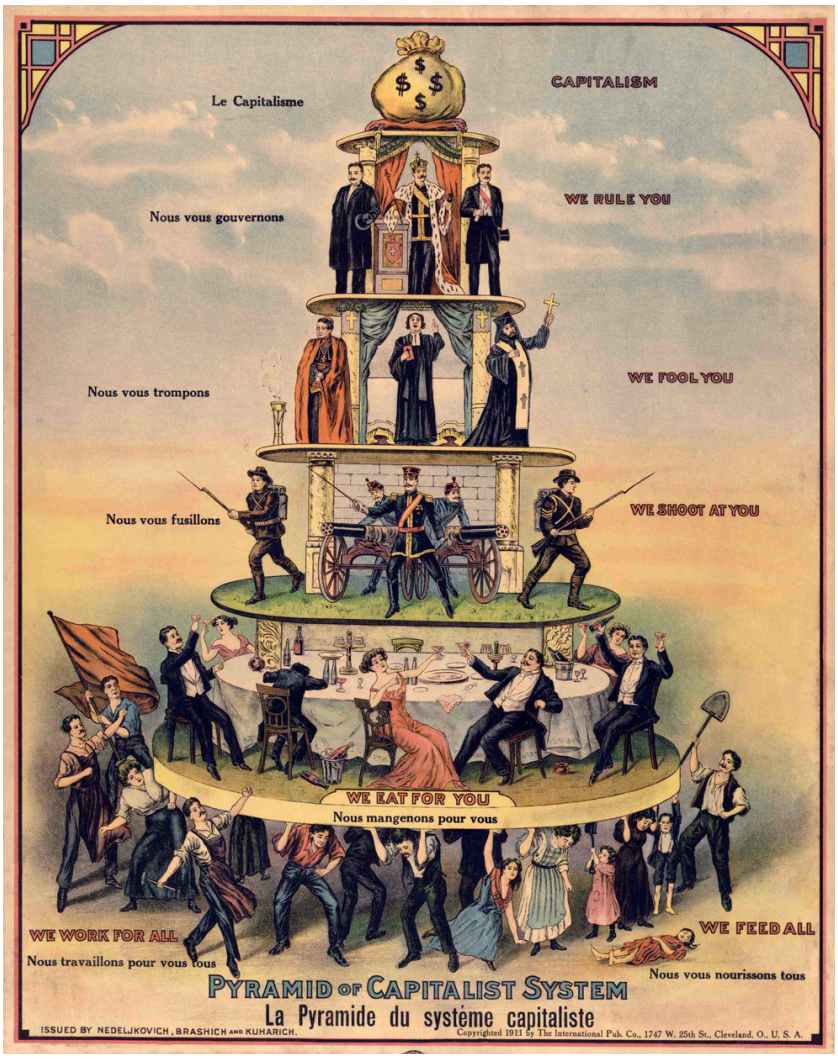


Figure 4: Pyramid of Capitalist System (1911): Created by the Industrial Workers of the World, this iconic illustration critiques capitalism by depicting a hierarchical society where the working class supports the wealth and power of the upper classes.

production and product, profit, and control set the key values to observe when studying capitalist impacts on architectural practice. Identifying these core concepts makes it possible to recognize, maneuver or find alternatives to these systems.

The Architect and Capitalism

The term "architecture" can be understood in two primary ways: first, as a built product, the tangible outcome of design, and second, as a process encompassing the creative and technical steps through which spaces are conceived.[15] Architectural work results in both the physical object and the drawings created by architects, both of which can be viewed as forms of production and, therefore, subject to commodification. Like any commodified entity, architecture is susceptible to exploitation. Marx critiques this dynamic in the following, highlighting how the exchange value of commodities drives production to prioritize market purposes over intrinsic or functional value:

> This division of a product into a useful thing and a value becomes practically important, only when exchange has acquired such an extension that useful articles are produced for the purpose of being exchanged, and their character as values has therefore to be taken into account, beforehand, during production.[16]

Marx argues that when something becomes a commodity, it is inevitably placed on a path toward exploitation.[17] Similarly, the labour-commodity of an architect's work reflects the exchange value they contribute to a design or project (see Fig. 5). This commodification exploits both the product and the labour, often resulting in the overproduction of poorly designed buildings and drawings. Furthermore, it perpetuates cycles of investment and neglect, where surplus capital is funnelled into buildings and infrastructure as temporary reservoirs. Once profits are extracted, vacant buildings, substandard structures and burdened users and communities remain, further reinforcing systemic issues within the built environment.[18]

In addition, the idea of social reproduction perpetuates the normalization of commodified buildings. This process typically reinforces societal norms and behaviours by cultivating desire.[19] Witold Rybczynski, a Canadian-American architect, professor, and author of *Home: A Short History of an Idea,* examines a phenomenon in the evolution of the modern notion of "home," where the expectation of living in a private, individualized sphere becomes the norm.[20] He argues that rigid expectations of program and use constrain architecture's potential. For example, there is a common assumption that every family home must include specific features, such as a kitchen, dining room, master bedroom and bathroom suite, and two-car garage. Similarly, societal expectations restrict the design of spaces like classrooms, hospital rooms, and offices, reducing architecture to prescribed programmatic functions. Rethinking spatial usage beyond these predefined applications unlocks its potential and challenges the nuances of capitalist frameworks, allowing architecture to respond to user needs rather than assuming

15 Mangold, "Money-tecture...", 74-78

16 Marx, Karl. Capital: Volume One: The process of capitalist production. International Publishers, 1987.

17 Mangold, "Money-tecture...", 74-78

18 Harvey, David. *Paris, capital of modernity*. New York: Routledge, 2006.

19 Forty, Adrian. *Objects of desire: Design and Society since 1750*. New York, N.Y: Thames and Hudson, 1992.

20 Rybczynski, Witold. *Home: A short history of an idea*. New York: Penguin Books, n.d.

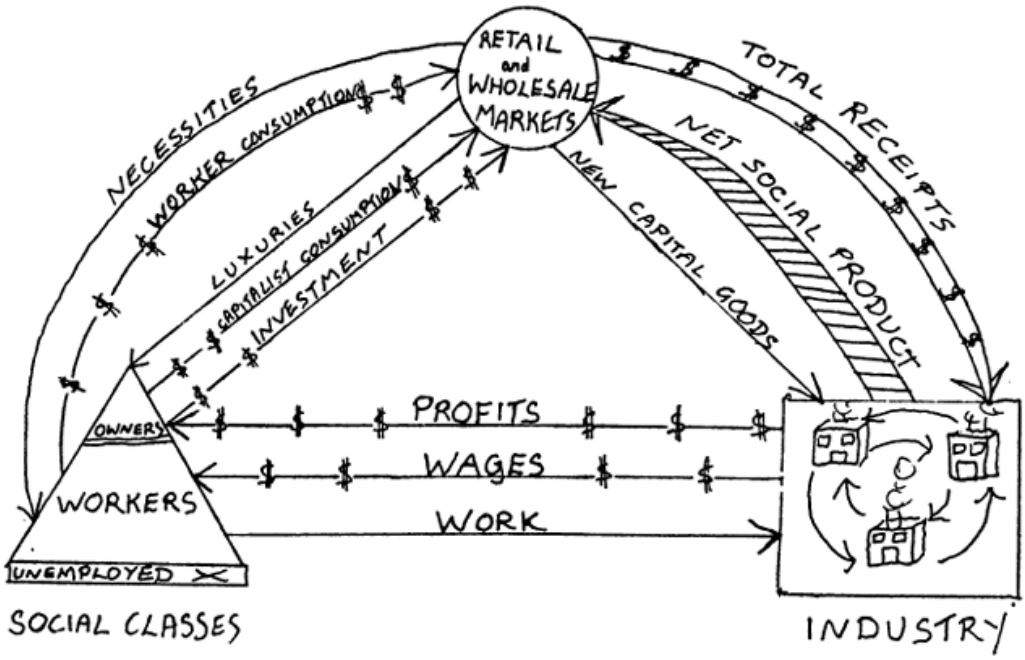


Figure 5: Edward Nell's diagram illustrates interactions between three central elements: the process of production, the market, and the social groups that make up the population within a theoretical capitalist system.

them.

Regardless of its initial design intent, a space's function is often reinterpreted by its users, even if its purpose is rigidly dictated. Users will find alternative ways of utilizing their spaces according to their needs or desires despite these systems of control. When a space's functions are explicitly defined, power and hierarchy are imposed, limiting its versatility and users' agency but not completely eradicating it. As a drastic real-world example, the Berlin Wall, which separated East and West Germany following WWII, sought to impose, subvert, and divide the two opposing political groups controlling the country.[21] The state authority of East Germany clearly defined and dictated the wall's purpose, reinforcing control and restricting movement.[22] Over time, acts of defiance, artistic expression, and the emergence of democratization in Europe culminated in the dismantling of the wall from both sides.[23] The wall's change in symbolism from authority and control to freedom and autonomy represents the extremes of prescriptive design and its potential to be subverted for agency (see Fig. 6).

The Architect and the Institution

In some instances, architectural education has been known to reinforce the status quo deliberately or unintentionally by perpetuating design norms that align with capitalist frameworks.[24] For instance, the rise of modernism from the late 19th to mid-20th century, which saw the prioritization of innovative efficiencies, physical abstractions, and industrialization, birthed many pivotal architects of study, such as Le Corbusier, Mies Van der Rohe, and Walter Gropius.[25] These architects played key roles in shaping the built environment as well as defining the future of architectural education that is commonly known today. Their seminal works continue to be a cornerstone to emerging design students. However, many of these works are derived from key capitalist values, such as mass production, commodification, and determinant design. Yet, these works continue to set a precedent for young designers, mainly through their aesthetics and architectural expression, with little understanding of the conditions of their production or how they impacted those who use the space. Mangold critiques this issue, arguing that such norms frequently become canonized within architectural education without critical reflection on their broader consequences.[26] He notes that while many schools present themselves as progressive and challenging, they often lack the ability to resist capitalist hegemony, leading to a narrow focus on style and formal aesthetics.[27] According to Mangold:

> … architectural education has a double-edged effect that further exploits architecture. On one side, an emphasis on formal arguments about style and aesthetics marginalizes design within the broader contexts of economics and production. These debates can be dismissed as frivolous and secondary to practical concerns. On the other side, because design fails to address or challenge the practical realities of how people inhabit spaces, it is often seen as unnecessary.[28]

21 Britannica, T. Editors of Encyclopaedia. "Berlin Wall." Encyclopedia Britannica, December 18, 2024. https://www.britannica.com/topic/Berlin-Wall.

22 Ibid

23 Ibid

24 Mangold, "Money-tecture...", 74-78

25 Jiang, Bin. "The Status Quo of Architecture and Its Impact on Urban Management: Christopher Alexander's Insights." Journal of Urban Management 13, no. 4 (December 2024): 557-64. https://doi.org/10.1016/j.jum.2024.09.003.

26 Mangold, "Money-tecture...", 74-78

27 Ibid

28 Ibid



Figure 6: Berlin Wall: The Brandenburg Gate, 1961, showcasing the earliest iteration of ther wall consisting of only barbed wire (top left). Individuals from East and West Berlin gathering and climbing over the Berlin Wall a day after it's opening on November 10, 1989 (top right). People from West Berlin gathering at a newly created opening at Potsdamer Platz, November 1989, note the East German guards standing guard at the opening (bottom).

This critique underscores the dangers of reducing architecture to aesthetic or even prescribed programmatic concerns, which isolates design from its overarching social, economic, and spatial contexts. However, the author generalizes these assumptions regarding architectural education. While this may have been the case historically, contemporary practices attempt to focus on a broader scope of social factors when considering design. Nevertheless, through a wider lens, contemporary architectural education still risks training students to replicate rather than reimagine by focusing on architectural movements of the past without considering their origins and social impacts. Consequently, schools face the danger of becoming spaces of mimicry, where students are assessed on their ability to reproduce predefined design standards of capitalist-based movements. Matthew Holt, the Deputy Director of the School of Cybernetics at the Australian National University, expands on these ideas by examining how modern universities, as institutions embedded in post-industrial capitalism, perpetuate production-based pedagogies. He observes:

> Postindustrialism, furthermore, is a fundamentally global phenomenon. Political economy is no longer tied to the nation-state, and the research produced by universities is to assist and expedite multinational expansion and transactions. In turn the individual a university produces is a knowledge-worker not a citizen. The university today, therefore, is primarily skills-based, not ideals-based. . . . The legitimation of knowledge is no longer sought in a story of emancipation (from superstition, from authority), but in the success of the ongoing operation of the system. The question driving education is no longer 'Is it true?' but 'What use is it?' 'Is it saleable?' and 'Is it efficient?'[29]

While the previous point looked at the historical impacts, Holt's analysis highlights how universities prepare individuals to operate within the capitalist system, prioritizing skills that serve market demands over ideals that foster critical engagement or social transformation (see Fig. 7). While this may be the case for other fields of study, architectural education does in some ways try to resist this homogeny. Although aspects of aesthetics and production remain prominent in the field of study, a more significant focus on contemporary issues related to climate change, equity, affordable housing, and a broader understanding of cultural history has become apparent in the architectural curricula, attempting to counter capitalist institutionalization. A long-standing example of this can be seen in Rural Studio; while not completely exempt from capitalist institutionalization as it functions in tandem with a university, its ongoing efforts resist the perpetuation of exploitative cycles. Functioning as a design-build program at Auburn University, co-founded by Samuel Mockbee and Dennis Ruth in 1993, the program provides students with hands-on experience designing and constructing sustainable, affordable housing and community-oriented projects in rural Alabama. In understanding the legacy of racism and discrimination within these contexts, students live and work alongside local communities with a context-based service-learning experience, designing and building

29 Holt, Matthew. "The Black Book: Emilio Ambasz's University of Design." *Design Research Foundations*, 2018, 523–48. https://doi.org/10.1007/978-3-319-73302-9_24.

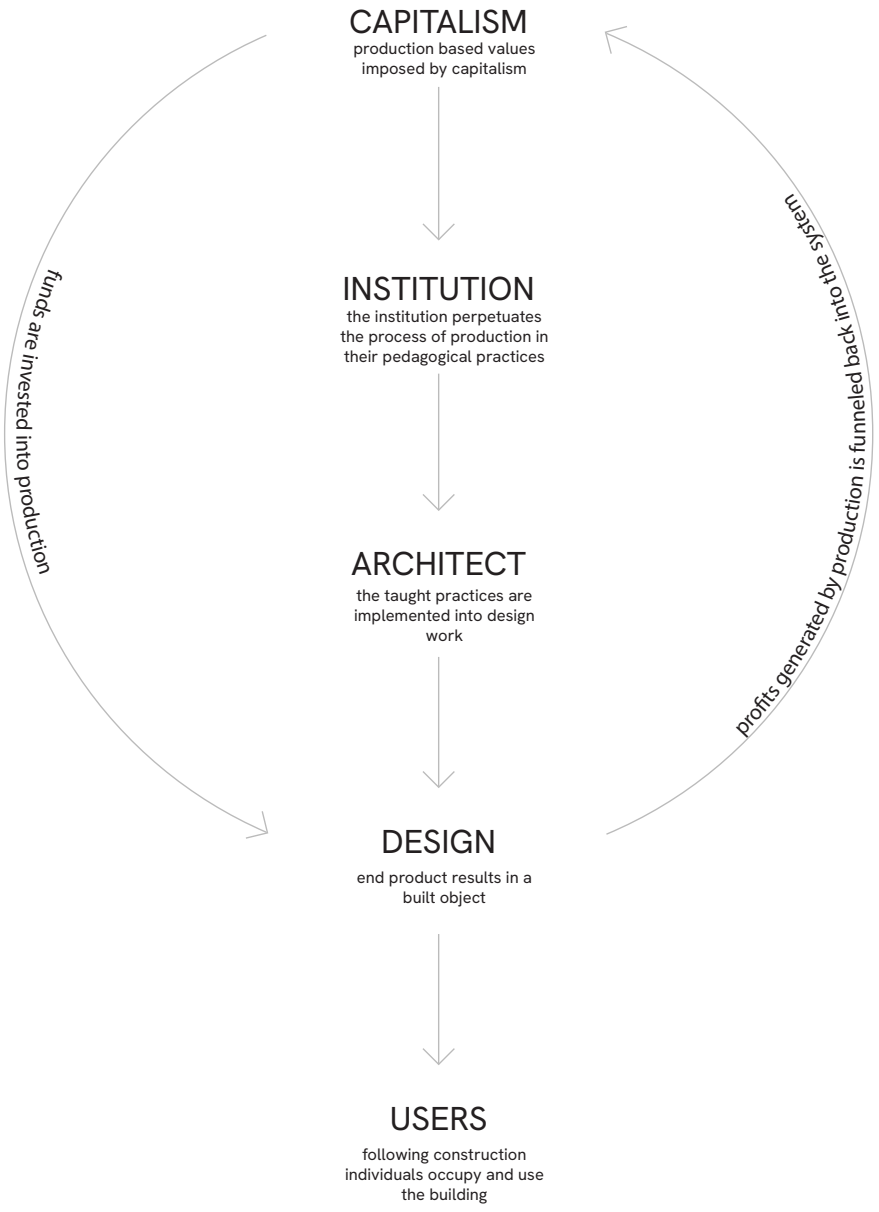


Figure 7: Illustration of the cycle of capitalism and its perpetuation of production based values on the field of architecture and its education.

high-quality, energy-efficient homes engaging with food security, water infrastructure, and black communities. The overall mission of this program is to prepare students to become architects and engaged citizens, responsive to local and global challenges while supporting rural communities and addressing systemic inequalities (see Fig.8).[30]

Despite efforts to redefine the focus of architectural education, institutionalization continues to exert a significant influence over the field, shaping how architecture is taught, practiced, and valued. While programs like Rural Studio demonstrate a shift toward socially responsive and community-driven design, such initiatives remain exceptions within a broader system that is still deeply entrenched in capitalist frameworks. Though increasingly acknowledging issues like sustainability, affordability, and social equity, architectural education often struggles to fully disentangle itself from the economic structures and production-based pedagogies that define modern universities. Even as schools incorporate critical discourse and alternative methodologies, the overarching system continues to prioritize efficiency, marketability, and the commodification of architectural knowledge. The challenge, then, is not merely introducing new pedagogical approaches, but addressing the systemic forces that shape architectural education itself. Without deeper structural change, architecture risks remaining a field where progressive ideals coexist with, rather than challenge, the institutionalized forces of production and capital, ultimately limiting its potential as a tool for spatial, economic, and social transformation.

Like its education, architectural practice is susceptible to institutionalized capitalism. Moreover, as a privatized business, its base operation is deeply rooted and reliant on these frameworks. However, certain practices have made efforts to distinguish themselves and attempt to break free from the momentum and speed that capitalist systems require. As an example, Tod Williams Billie Tsien Architects emphasizes the value of slowness and gradual clarity in architecture. They advocate for a thoughtful, tactile design process that resists the rush toward efficiency. In On Slowness, an essay written by the two architects in 1999, they highlight the importance of hand drawing and incremental decision-making, which fosters a collaborative and immersive studio environment where design evolves organically. Their approach prioritizes deep engagement with materials, spaces, and context rather than predefined strategies or rapid execution. They reflect on the nature of architectural vision, distinguishing their practice from purely conceptual or visionary architecture. Instead, they find inspiration in problem-solving and site-specific design, seeing architectural vision emerge gradually through careful work rather than radical gestures. Their work underscores their commitment to an architecture that grows thoughtfully, embracing patience and depth over speed and spectacle.[31]

Despite the persistent influence of capitalist structures on both architectural education and practice, efforts to resist these forces, though often small in comparison to the larger framework, demonstrate a determined desire to reclaim design as a meaningful and socially responsive act. Initiatives like Rural Studio and the philosophies of architects such as Tod Williams and Billie Tsien illustrate that architecture can operate outside the narrow confines of commercial efficiency, prioritizing slowness, community engagement, and critical inquiry

30 "About." Rural Studio, July 11, 2022. https://ruralstudio.org/about/.

31 Tsien, Billie, and Tod Williams. "On Slowness." Tod Williams Billie Tsien Architects, 1999. https://twbta.com/and-also/on-slowness/.



Figure 8: Images of Rural Studio's rehabilitation of the Perry County Learning Center, designed and constructed by 5th year students.

over pure market-driven production. These approaches suggest an alternative vision, one where architecture serves not just as a commodity but as a vehicle for equity, sustainability, and cultural depth. However, the challenge remains: while architectural education and practice increasingly integrate contemporary concerns such as climate change and social justice, its underlying structures continue to reinforce capitalist imperatives. True transformation requires not only incremental shifts in pedagogy and practice but also a fundamental rethinking of architecture's role within society. If the ultimate goal is to cultivate engaged citizens rather than efficient producers, then both education and practice must be reoriented to prioritize values beyond economic expediency, toward a discipline that actively shapes more just, thoughtful, and enduring environments.

Methodologies

Architects and architectural students must redefine their roles to move beyond institutionalized capitalist frameworks. They should no longer view themselves simply as knowledge workers, producing designs that align with market demands, but as active citizens accountable for shaping, reinterpreting, and transforming space. Subsequently, they must view themselves as operators both within and outside the margins (see Fig. 9). This shift requires first understanding how capitalist systems are ingrained in key aspects of architectural theory and education and finding alternative ways of disseminating them to broaden the scope and allow for greater flexibility. Through this, other ways of architecture can be applied to support these concepts.

The following chapters will deconstruct capitalist architectural frameworks by exploring three key areas of interest inspired by Henri Lefebvre's *The Production of Space* and its three categories of spatial production: lived space, physical space, and conceived space.[32] Firstly, drawing from Bruno Latour's Actor-Network Theory, the first chapter will examine "the social," exploring the interconnected relationships between human and non-human actors and the importance of understanding the network of relationships between them rather than rigid hierarchical structures. Next, the following chapter will delve into "the physical," using Latour's work on dynamic architecture to highlight spaces' fluid and ever-evolving nature, as opposed to viewing them as static commodifiable objects. Finally, the third chapter will address "the mental," engaging with various authors to understand the varying degrees of agency and structure in defining spatial usage, practice and control.

These concepts serve as the foundation for dismantling capitalist frameworks, offering new ways of approaching space, architecture, and pedagogy. The University of Waterloo School of Architecture will serve as a case study and point of departure, where these ideas will be translated into conceptual interventions that will act as experiments, embodying the theories discussed. The aim of these interventions will be to spark discourse regarding how to appropriate and reconceptualize spatial usage under capitalist frameworks and, in doing so, empower student agency around architecture and education. By embracing the evolution and iterative nature of space, these interventions aim to inspire a more inclusive and responsive approach to design and education.

32 Lefebvre, Henri. *The production of space*. Translated by Donald Nicholson-Smith. Oxford, OX, UK: Blackwell, 2017.

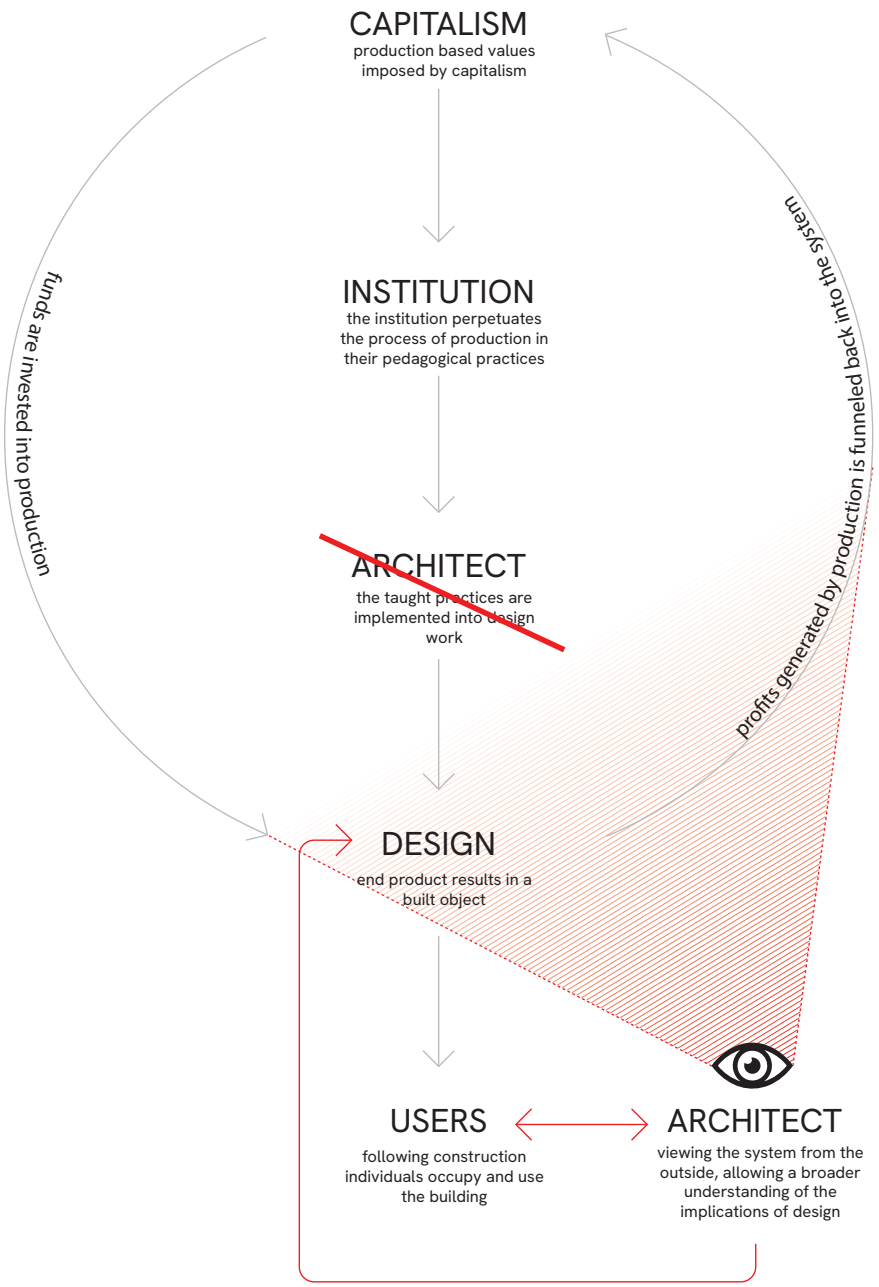
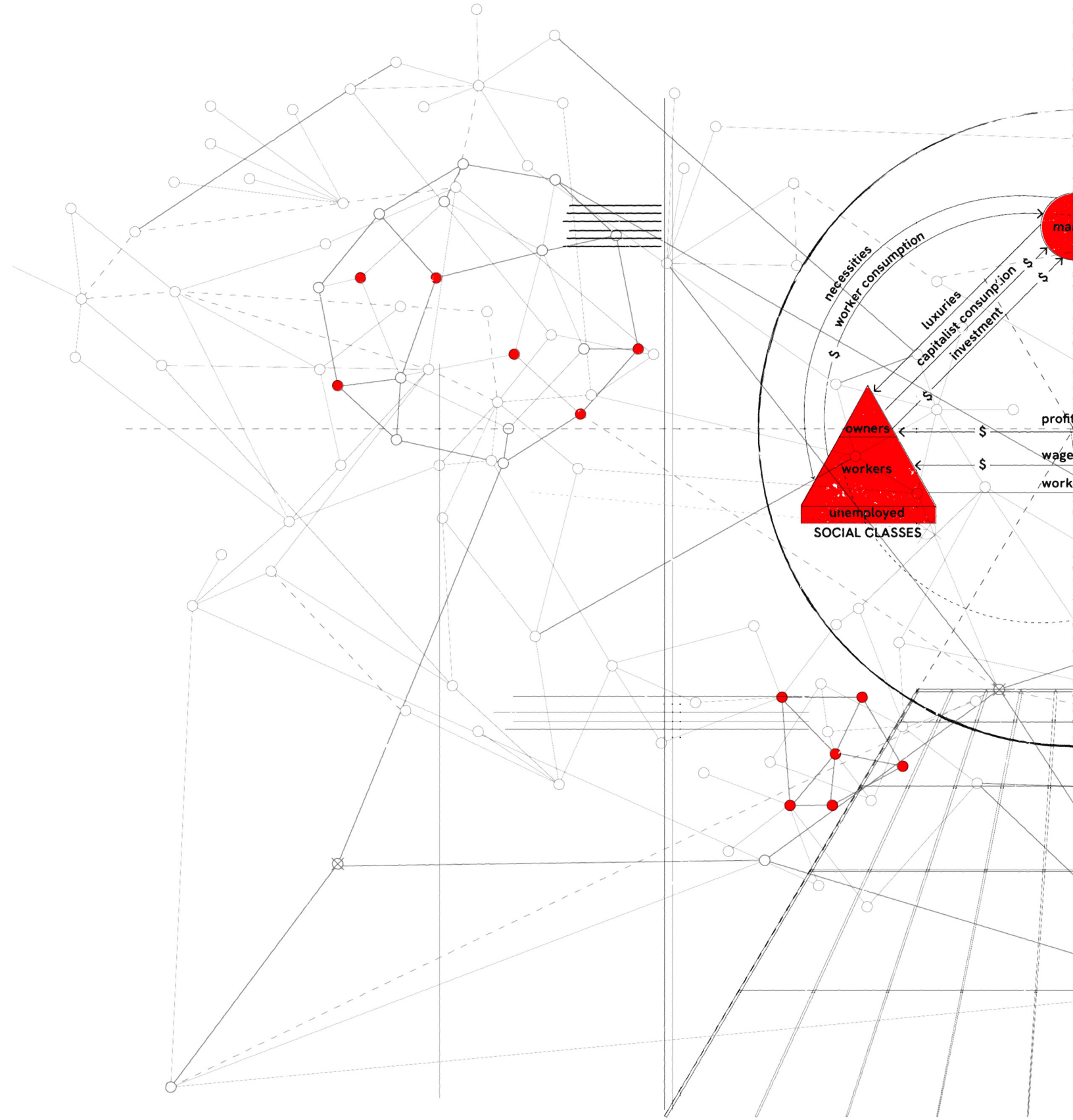


Figure 9: Illustration depicting how to re-orient the architect by placing them beyond the scope capitalist frameworks, allowing them to act as user, designer and observer and in doing so understanding how to work with or around these structures.


necessities
worker consumption
luxuries
capitalist consumption
investment
$
owners
workers
unemployed
SOCIAL CLASSES
profit
wage
work

CHAPTER ONE

THE SOCIAL



Introducing Actor-Network Theory (ANT)

Understanding society and its formations is essential for deconstructing capitalist frameworks, production-based pedagogical practices and processes of marginalization. This requires examining the rigid social systems that uphold these frameworks and searching for alternative approaches to understanding their influence on design and education. In sociology, the word "social" pertains to the interactions, relationships, and structures individuals form within a society.[33] It encompasses how people connect, communicate, and organize themselves, influencing behaviours, norms, and conventions. Traditional sociological approaches often emphasize fixed structures and predefined categories, focusing on overarching systems such as institutions, hierarchies, and norms to explain social phenomena. For instance, Structuralism, a tool in social science, interprets society as a stable framework where enduring rules and relationships shape human behaviour.[34] These methods frequently rely on binary distinctions, such as human versus non-human or micro versus macro, simplifying complex social interactions.[35] Moreover, traditional sociology typically adopts a human-centric perspective, treating non-human elements like tools, architecture, or technology as passive rather than active contributors to social dynamics.[36] This perspective reinforces a deterministic view of society, where outcomes are primarily dictated by systemic forces such as capitalism or cultural norms, sidelining social interaction's emergent and dynamic aspects.[37]

In the book *Reassembling the Social: An Introduction to Actor-Network Theory*, Bruno Latour, a French philosopher and sociologist, presents a compelling alternative to traditional sociological and capitalist approaches by rejecting fixed social structures and hierarchies. Alongside Michel Callon, Madeleine Akrich, and John Law, who are all active sociologists, they developed a theoretical and methodological approach to social theory called Actor-Network Theory (ANT). ANT adopts a "flat" ontology, where all factors, whether objects, ideas, processes, and humans, are treated as equally significant in shaping social situations.[38] This perspective shifts the focus from hierarchical systems to the complex and dynamic networks of interactions that produce social realities (see Fig.10). This process relies on an empirical basis of analysis, emphasizing the "description" of social activity over its "explanation," allowing for a more nuanced understanding of the networks and relationships that shape these realities.[39] To explain social phenomena, ANT focuses on the connections and interactions between human and non-human actors, emphasizing the dynamic and fluid nature of these associations.[40]

Thus, ANT directly challenges capitalism's foundational principles by highlighting the interconnectedness of all entities and undermining the centrality of humans as the sole drivers of societal change. By focusing on the distributed agency within networks and rejecting hierarchical categorization, ANT offers a critical lens through which to examine power relations, the evolution of architectural practices, and the formation of social experiences. This perspective challenges capitalist paradigms, advocating for an integrated and adaptive approach to addressing societal challenges and exclusions.

33 Faris, Robert E.l, and William Form. "sociology." Encyclopedia Britannica, February 13, 2025. https://www.britannica.com/topic/sociology.

34 Durkheim, Émile. *The Rules of Sociological Method*. Translated by W. D. Halls. New York: Free Press, 1982.

35 Dilaveroglu, Busra, Cigdem Polatoglu, and Aysen Ciravoglu. "A Review on Actor-Network Theory as a Potential Tool for Architectural Studies." EURASIAN JOURNAL OF SOCIAL SCIENCES 9, no. 1 (2021): 44–60. https://doi.org/10.15604/ejss.2021.09.01.005.

36 Latour, Bruno. *Reassembling the social an introduction to actor-network-theory*. Oxford: Oxford University Press, 2005.

37 Giddens, Anthony. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley: University of California Press, 1984.

38 Latour, *Reassembling the Social*, 2005

39 Ibid

40 Ibid

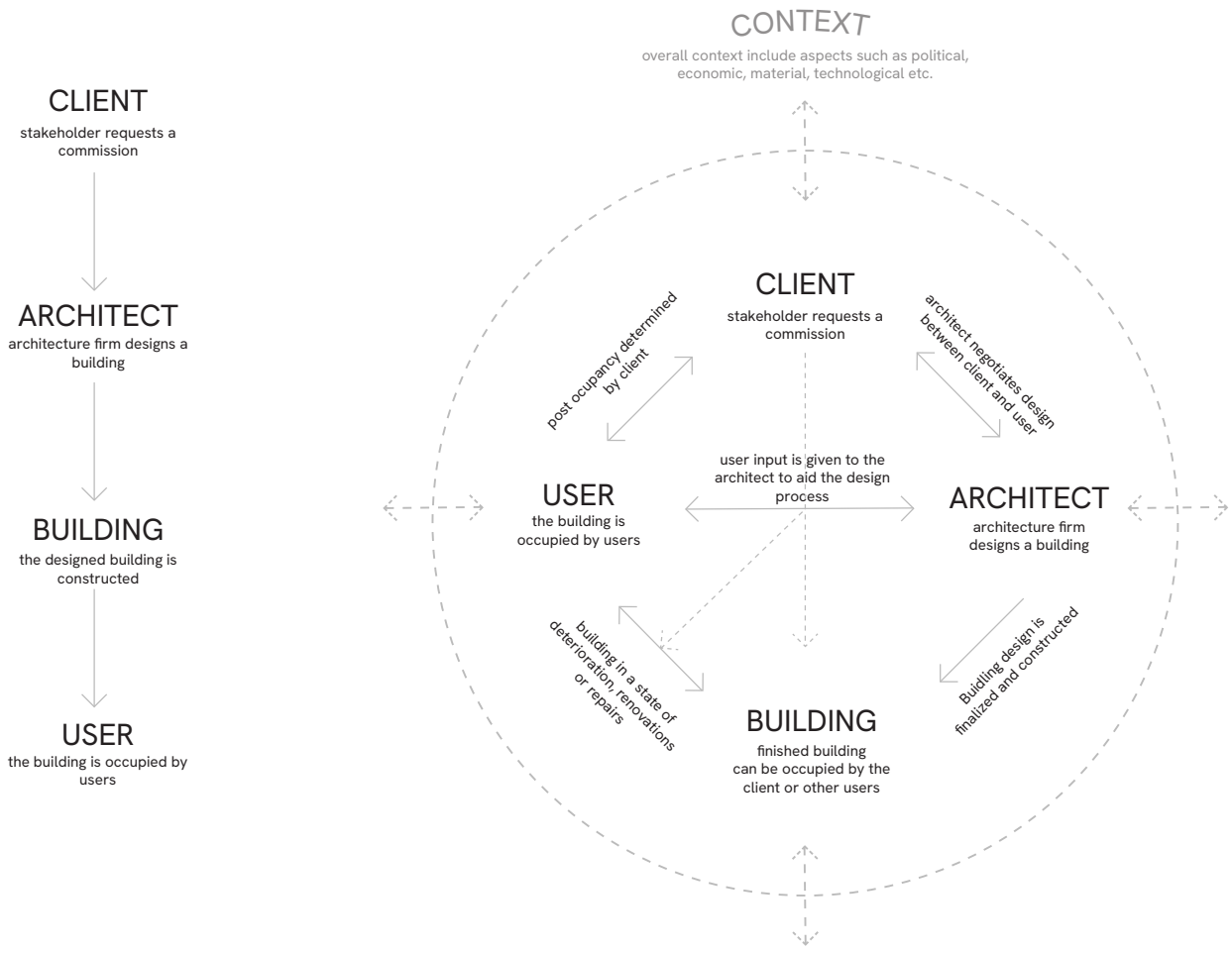


Figure 10: Simplified diagrams illustrating the difference between typical architectural social structures (left) and Actor Network Theory (right).

As an example of its application, the Cité Frugès de Pessac, a low-cost housing complex by Le Corbusier in 1926 in Pessac, France, acts as a tangible case study of how this theory can be applied. It was designed using modernist principles, primarily focusing on the capitalist values of functionalism and standardization (see Fig.11). However, following poor design choices, the project faced financial difficulties. The total construction cost exceeded the initial plan by four times, and the estimated value of the houses was double the amount of similar homes on the market.[41] Only a portion of the planned buildings were constructed, and due to these issues, they were forced to sell and abandon the project. However, the new residents soon began modifying their homes to better suit personal needs and preferences, leading to significant alterations such as extensions, layout changes, and facade modifications, with these user-driven transformations persisting for over 40 years.[42] However, the Pessac houses are currently being restored to Le Corbusier's original plans to preserve the architect's fundamental style over the lived reality of its users.[43] In a journal article by Socrates Yiannoudes, an assistant professor at the Technical University of Crete, he expands on the relationship between the housing project in Pessac and its relationship with ANT. Yiannoudes suggests that ANT provides a valuable framework for understanding these interactions, as it conceptualizes buildings as technological artifacts that mediate actions and inform social behaviour while being continuously transformed by social activities. In doing so, it flattens the preconceived hierarchies or emphasis of a determinant architect, Le Corbusier, towards a broader scope encompassing a multiplicity of human and non-human actors. The study highlights key ANT concepts like delegations, translations, inscriptions, de-inscriptions, and re-inscriptions. [44]

Definitions: [45]

- **Delegation**: Assigning tasks or roles to non-human actors (e.g., buildings, materials, technologies) by humans.
- **Translation**: The negotiation and reinterpretation of an object's intended purpose as it moves through different actors.
- **Inscription**: Embedding intentions or expected actions into a design or object.
- **Re-inscription**: Imposing new meanings or uses onto an object after its original purpose changes.
- **De-inscription**: Rejecting or altering an object's intended function through unintended use.

In the ANT context, Yiannoudes uses Le Corbusier's Pessac housing project to illustrate how architecture is dynamically shaped through interactions between occupants, designers, materials, contexts, and buildings. He explains that delegation occurs when designers assign specific functions or behaviours to buildings, as seen in Le Corbusier's attempt to impose modernist ideals of standardization and functional living through architectural design.[46] However, these intentions undergo translation, where users reinterpret and modify spaces

41 Walden, Russell, and Brian Brace Taylor. "Le Corbusier at Pessac: Professional and Client Responsibilities." MIT Press Open Architecture and Urban Studies, April 23, 2021. https://mitp-arch.mitpress.mit.edu/pub/f952902t/release/1.

42 Ibid

43 Yiannoudes, Socrates. "Actor-Networks in Le Corbusier's Housing Project at Pessac." *Fusion Journal*, no. 6 (2015). https://fusion-journal.com/issue/006-fusion-the-rise-and-fall-of-social-housing-future-directions/actor-networks-in-le-corbusiers-housing-project-at-pessac/.

44 Yiannoudes, Le Corbusier's Housing, 2015

45 Latour, Bruno. "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." *Shaping Technology/Building Society: Studies in Sociotechnical Change*. Eds. Wiebe E. Bijker and John Law, 225-258, Cambridge, Mass: MIT Press, 1992.

46 Yiannoudes, Le Corbusier's Housing, 2015

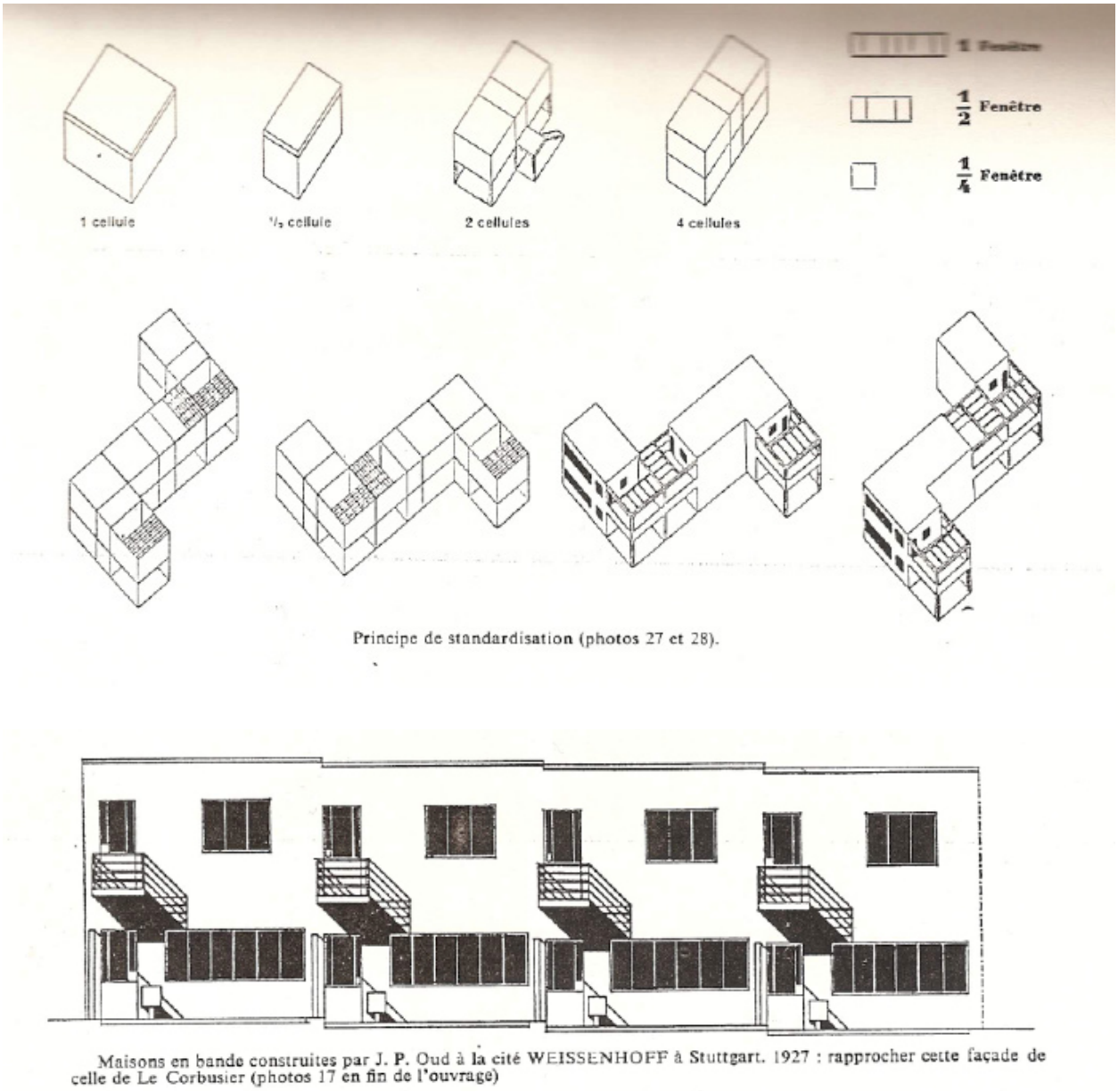


Figure 11: Axonometric drawings showcasing the modular nature of Le Corbusier's housing project in Pessac (top). Elevation view of the housing complex illustrating its standardization and prescriptive design (bottom).

to suit their needs, as seen when residents alter facades, add extensions, and reconfigure interiors (see Fig.12-13).[47] This shift reflects a process of de-inscription, where the original inscribed design expectations, such as open layouts and minimalist aesthetics, are rejected or adapted. Over time, these modifications lead to re-inscription, embedding new cultural and personal meanings into the built environment. Users transform their spaces beyond their original modernist vision and towards one more reflective of the area.[48] Through this lens, ANT highlights that architecture is never static but continuously negotiated through human and non-human actors. It reinforces that buildings actively shape social behaviours and urban life. It also reframes the significance of this project beyond acting as just one of Le Corbusier's seminal works, drawing equal emphasis on its users and contexts in dictating the design.

Architecture as a Non-human Actor

In ANT, "the social" is not treated as a separate domain or material, or in other words, as an independent variable, but as an emergent property of interactions and assemblages. Latour critiques conventional sociology for its assumption of an individual social domain, advocating instead for tracing the associations and networks through which actions and relationships are formed.[49] This perspective reframes architecture as an active participant within these connections by establishing built objects as non-human actors. Furthermore, as Bursa Dilaveroglu, a postdoctoral researcher and author of *A Review of Actor-Network Theory…,* explains:

> …buildings are constituted of small components that are continuously being 'assembled' and 'reassembled… [50]

Although Dilaveroglu primarily references architecture's physical materiality, she highlights the dynamic and interconnected nature of architectural assemblages and how they are not defined by scale but rather by the relationships and interactions between their components. From an architectural perspective using ANT, buildings are understood as living networks continuously expanding, contracting, and transforming as they gather and incorporate new assemblages. They must consider the changing accessibility of materials and the diverse geographic and temporal scales present during and after design. This point of view is particularly relevant to architectural education and practice, as architecture as a whole can be interpreted as constantly transforming, influencing, and being influenced. It explores the challenges inherent in hierarchical structures, where cause and effect are seen as linear and deterministic. Additionally, Dilaveroglu's perspective on scale highlights how even the smallest elements of architecture and design can influence relationships, interpretations, and perceptions when viewed as assemblages. Considering these ideas through the lens of margins suggests that even minor design interventions can create lasting impacts within a broader network of connections

Through this concept, architecture is no longer seen as a tool or method of control wielded by actors but is instead recognized as an actor itself. ANT offers a broader perspective

47 Yiannoudes, Le Corbusier's Housing, 2015

48 Ibid

49 Latour, *Reassembling the Social*, 2005

50 Dilaveroglu, A review on Actor network theory, 2021

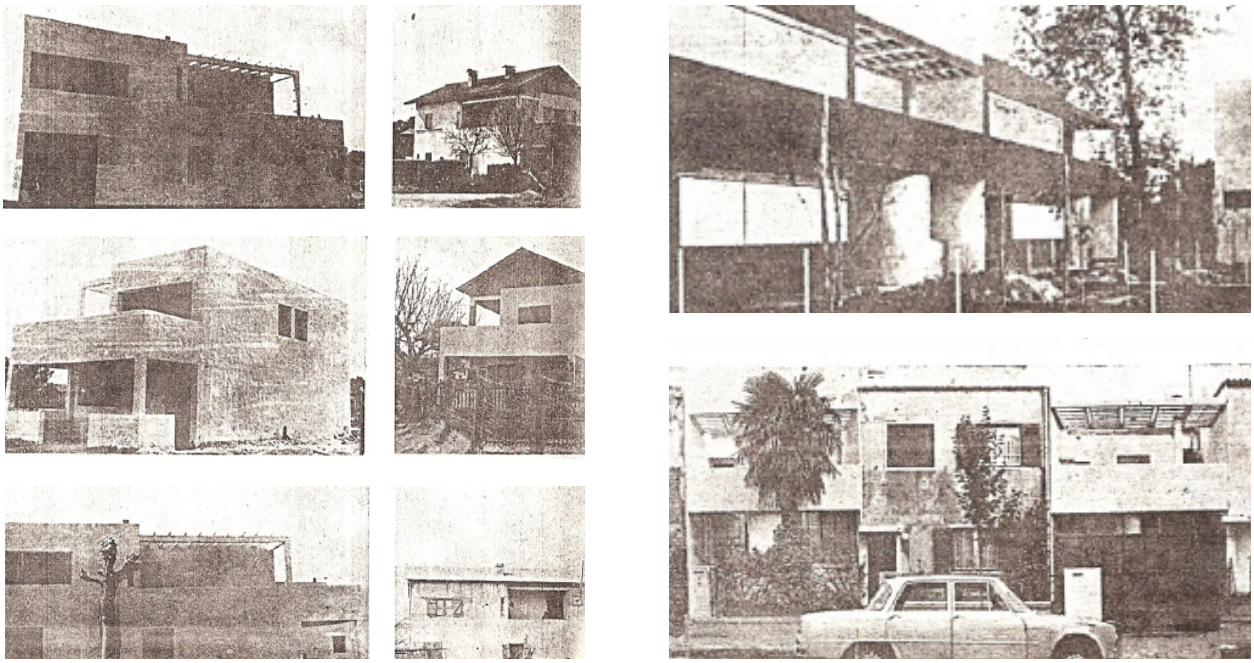


Figure 12: Set of images from Philippe Boudon's book, Lived-in architecture: Le Corbusier's Pessac revisited. Images showcasing the contrast of the initial constructed design of Le Corbusier versus the user defined modifications. Users incorporate pitched roofs over the rooftop terraces to reduce leakage as well as mimic the local vernacular typologies (left). The facades were also modified to reduce the size of window openings (right).



Figure 13: Set of images from 2010 of the houses in Pessac. Images showcase modified windows and the addition of canopies, covers and blinds (top). Previously modified buildings have been restored to their original state and painted in bright vibrant colours as planned by Le Corbusier (bottom).

by acknowledging the agency of both human and non-human actors in shaping the built environment. By considering ANT and the diverse actors involved, this framework has the potential to reframe architectural structures and move beyond the constraints of capitalism, which traditionally prioritizes a centralized and commodified human perspective.

ANT and Architectural Pedagogy

Building on these principles, ANT provides a transformative lens to challenge entrenched hierarchies in architectural pedagogy. As highlighted by Dilaveroglu, ANT reframes architecture from a static, human-centred practice to a dynamic assemblage of actors, encompassing materials, tools, and spatial configurations.[51] This approach aligns with Latour's broader claim that "social" is not a pre-given domain but emerges from interactions within networks.[52]

In this context, shifting the focus away from production-based pedagogy towards the interconnected networks that shape design reduces the significance of the product. Simply put, a building itself cannot solve the world's problems, but design can. A building itself, as a static, material object, cannot solve the world's social, economic, or environmental problems. However, design, which encompasses architecture, urban planning, and networked systems of thinking, has the potential to influence and address these issues indirectly by shaping human behaviour, interactions, and sustainable approaches. Although post-secondary architectural institutions do indeed teach design, significance and emphasis are put on the finalized production of a building, which has the capacity to perpetuate broader systemic issues.

ANT encourages educators and students to view architecture not as a fixed practice but as a dynamic and relational field where knowledge is constructed through interactions between materials, tools, contexts, and people. This approach challenges traditional hierarchies within pedagogy by emphasizing experimentation, collaboration, and the continual reassembly of ideas and practices, fostering a deeper understanding of architecture as an evolving discipline that responds to and shapes its broader networks.

A similar approach was taken when designing Tezuka Architects' Fuji Kindergarten, constructed in 2007. Its round, oval shape and large sliding doors, which frequently remain open, encourage children to play and interact with other students, the environment, and the material world (see Fig.14). This method teaches the importance of independence and socialization, giving students free reign over how they experience and learn. This environment has led to improved behaviour, focus, and learning.[53] In their submission statement, Tezuka Architects stated the following:

> We want the children raised here to grow into people who do not exclude anything or anyone. The key to Fuji Kindergarten was to design spaces as very open environments, filled with background noise. When the boundary disappears, the constraints disappear. Children need to be treated as a part of the natural environment.[54]

51 Dilaveroglu, A review on Actor network theory, 2021

52 Ibid

53 Lynch, Patrick. "Tezuka Architects' Fuji Kindergarten Wins 2017 Moriyama Raic International Prize." ArchDaily, September 20, 2017. https://www.archdaily.com/880027/tezuka-architects-fuji-kindergarten-wins-2017-moriyama-raic-international-prize.

54 Royal Architectural Institute of Canada. "Tezuka Architects Wins 2017 Moriyama Raic International $100,000 (CAD) Prize for Excellence in Architecture." Royal Architectural Institute of Canada, November 20, 2023. https://raic.org/news/tezuka-architects-wins-2017-moriyama-raic-international-100000-cad-prize-excellence.



Figure 14: Images of Tezuka Architects' Fuji Kindergarten constructed in 2007, they highlight the building's open layout, integration into the natural world and emphasis on play. These elements encompass the theories of ANT by prioritizing the significance of networks, assemblages and interactions of the human and non-human actors.

This project, while not actively using ANT methodologies, displays many of its core values and manifests itself into a tangible building. By shifting away from traditional teacher-to-student knowledge transfer, the focus moves toward non-human elements strategically embedded within the school to foster self-directed learning. This approach prioritizes process and exploration, encouraging students to engage with their environment as an active participant in their education. Where the significance of all kinds of actors, human and non-human, play an essential role in early childhood development. By removing the boundaries present in many contemporary school practices, they allow students to form their own networks of understanding and fundamental social relations.

Although this is an example based on early childhood education, its core principles extend to architectural learning. Just as the kindergarten's design encourages exploration and self-directed learning, architecture schools can benefit from rethinking how their physical spaces shape educational experiences. ANT offers a shift towards a relational approach, where learning emerges through understanding the interactions of students, faculty, tools, materials, and contexts. Much like the Fuji Kindergarten project, which enhanced learning through its design and open-ended engagement, architecture schools can benefit from deconstructing production-based expectations through active participation. By reimagining the very spaces students occupy, these institutions can become physical embodiments of their design explorations.

Networks and architecture

When a particular aspect of architecture is prioritized, it is imbued with power, making it susceptible to exploitation and reinforcing hierarchies within the discipline. In the previous example of the Pessac housing, aesthetics and architectural expression were prioritized over commercial viability and community needs. Le Corbusier's vision of a universal housing model demonstrated a top-down control of space while neglecting local contexts. In using ANT, the Pessac project is not framed as a completed prototype of social housing but an evolving network of interactions between multiple actors, humans (architects, residents, developers) and non-humans (materials, spatial layouts, culture). The capitalist logic of mass-produced housing sought to shape residents' behaviours, but users resisted by reclaiming their spaces. ANT helps recognize these user modifications not as deviations but as valid actors in the architectural network, shifting power away from the architect and the broader profession to a more participatory, grassroots process. Recognizing these dynamics allows for more discourse around how to approach architectural education and practice, ensuring that no single element dominates at the expense of others.

Countering this capitalist logic, the Huebergass and District Park Bern Housing project in Bern, Switzerland, presents a contrasting approach to that of the Pessac Housing (see Fig.15). While both were designed as affordable housing solutions, the Bern project involved a participatory



Figure 15: Images of Huebergass and District Park Bern Housing, by GWJ Architektur, ORT AG für Landschaftsarchitektur, and Soziale Plastik. Floor plan illustrating the connected laneway (top). Photographs of the building complex (bottom).

design process while prioritizing sustainability, inclusivity, and communal interaction, ultimately demonstrating a more effective model for dismantling capitalist-driven architectural community housing. A central laneway connects residents to both amenities and each other, fostering a strong sense of community. Additionally, its timber porches, which house stairwells and private balconies, are strategically oriented to facilitate open communication among residents and serve as spaces for occupant expression. Although the units in this project adhered to a similar standardization approach as those in Pessac, its primary focus was on minimizing energy consumption, leading to improved climate control, lighting, and overall comfort. This emphasis on sustainable energy use helped reduce costs and rental rates while decreasing the need for user modifications to the façade, unlike the extensive alterations observed in Pessac.[55] Although the housing project in Bern does not explicitly employ ANT methodologies, its practical considerations of context, community, and environmental connections align with key ANT principles. Although the housing project in Bern does not explicitly employ ANT methodologies, its practical considerations of context, community, and environmental connections align with key ANT principles. Its participatory design process, integration with the adjacent park to promote long-term social and ecological well-being, and emphasis on resident agency through features such as community gardens, adaptable porches, and shared street spaces all reinforce the idea of architecture as a network of evolving entities shaped by one another. Rather than a static, top-down development, the project demonstrates how built environments can continuously adapt to the needs of their users, encouraging both social interaction and spatial flexibility over time. Applying ANT to architecture reveals that spaces and buildings are not merely passive backdrops but active participants in shaping social and material realities. This suggests that buildings are not simply set pieces that frame human behaviours but act as mediators within the network, emphasizing their role in influencing behaviour, facilitating interactions, and negotiating power dynamics.

Transitioning from residential to educational spaces, the notion of a building as a mediator of agency remains prevalent. Within the same vein as the project in Bern, Zachary Christensen Fish, a former University of Waterloo School of Architecture graduate student, proposed an alternative approach to urban development and community-building, albeit smaller in scale. Ten years ago, in 2015, Fish explored the potential of vacant urban spaces in Cambridge, Ontario, and their role in community engagement and urban development (see Fig.16). His research demonstrated how students of the past have navigated the margins, challenging methods of occupation beyond the institution and its boundaries. It critiques how capitalist-driven suburban expansion has led to the hollowing out of downtown cores, leaving behind high commercial vacancy rates (over 40% in 2013). The research explored mobile architecture and temporary urbanism as alternative approaches to reactivating these underutilized spaces, emphasizing student-led initiatives over market-driven development. Using BRIDGE, a student-led club focusing on events and bridging the gap between the University of Waterloo School of Architecture and the community, as a case study, Fish's thesis documented these spaces'

55 Abdel, Hana. "Huebergass and District Park Bern Housing / GWJ Architektur + Ort AG Für Landschaftsarchitektur + Soziale Plastik." ArchDaily, November 13, 2024. https://www.archdaily.com/1023460/huebergass-and-district-park-bern-housing-gwj-architektur?ad_medium=gallery.

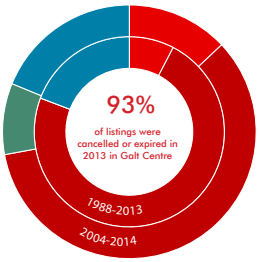


Figure 22: Commercial Listing Status 1988-2014.
Data Source: MLS.

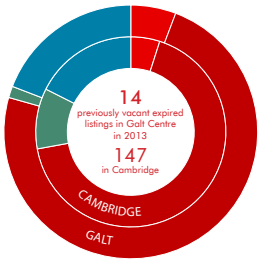
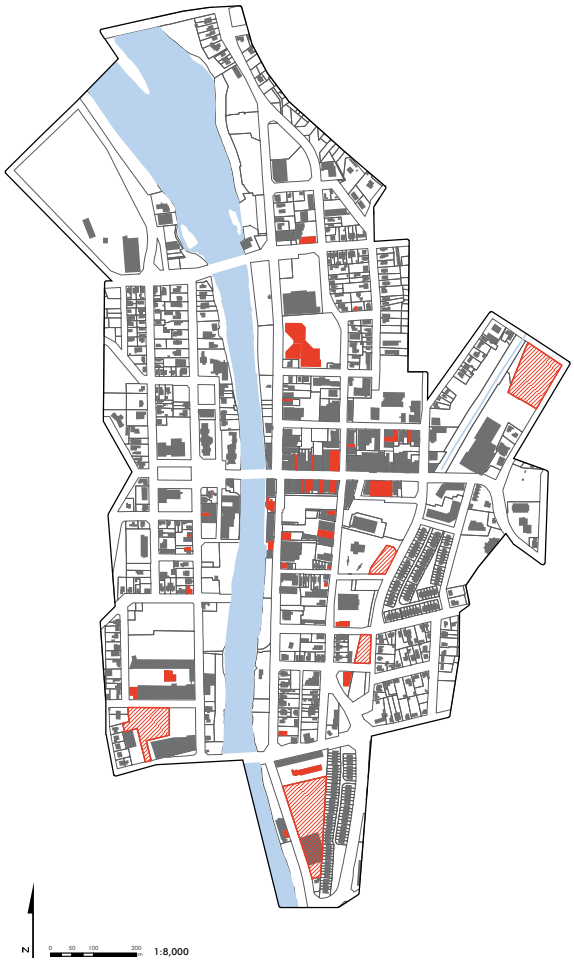


Figure 23: Commercial Listing Status 2013.
Data Source: MLS.





Visibly Vacant Buildings in Downtown Galt
Figure 24: [Right] Field study conducted in Jaunary 2014.

Figure 16: Diagrams from Zach Fish's thesis "Opportunity in Absence", illustrating commercial vacancy in downtown Cambridge.

active usage and temporality. It showcased how tactical urbanism, pop-up interventions, and collaborative social projects can transform empty spaces into places of gathering, knowledge sharing, and community growth, arguing that community-driven solutions are more effective than traditional economic strategies in fostering inclusive and sustainable urban renewal.[56] Furthermore, it highlighted the potential of informal approaches as a more effective and practical alternative in a context where expanding the school's physical space or acquiring a new building was neither feasible nor viable.

For some time, the initiative deeply connected the University and its students with the local community. Building owners provided multiple pop-up and temporary spaces free of charge through mutual agreements of short-term occupation, with one space in particular, 35/37 Main St., settling as a long-term hub in 2014 (see Fig.17-18). This space fostered a collective responsibility and empowered students to independently manage their social, communal, and educational lives parallel to the institution. It strengthened community-school relationships, integrated the school into its broader context, and gave students agency and autonomy over their spaces. Unfortunately, this venture ended following the COVID-19 pandemic in 2020 due to economic pressures on property owners to lease or sell their units to maintain financial stability through an uncertain time. Since then, there have been few attempts to pursue a similar model of community building, leaving a gap in tangible examples of student agency and connection to the local contexts.

The initiative would not have come to fruition without the support of the University of Waterloo School of Architecture. Their faculty assistance and connections to the local community played a crucial role in formalizing a platform for student independence. Although this project was largely supported by the School of Architecture, it challenged the ingrained institutional frameworks of formalized educational spaces. Functioning as a parallel entity to the school and resisting institutional absorption, its inherent lack of formal structure ultimately led to its closure. External pressures contributed to its shutdown, including market-driven real estate forces, the precarious nature of informal urban interventions, and the inability to secure long-term stability. The example of BRIDGE underscores a fundamental paradox and reality to resisting institutionalization in architectural education: while it equips students to challenge spatial norms, it often falls short in sustaining or integrating these challenges into the broader scope of the overarching institutions. This tension also reflects concerns regarding how architectural education, even in its attempts to engage with alternative spatial practices, remains deeply influenced by capitalist and institutional logic. The case of BRIDGE illustrates that architecture's potential for grassroots-driven transformation is often influenced by external conditions that it cannot fully control. While students were able to reclaim space and demonstrate new models of community engagement, the inability to secure lasting infrastructure reflects the fragility of non-institutionalized spatial practices within a system that prioritizes formalized approaches and structures.

56 Fish, Zachary Christensen. "Opportunity in Absence: Activating Vacant Space in the Temporary City." *Opportunity in Absence: Activating Vacant Space in The Temporary City*. Thesis, University of Waterloo, 2015.

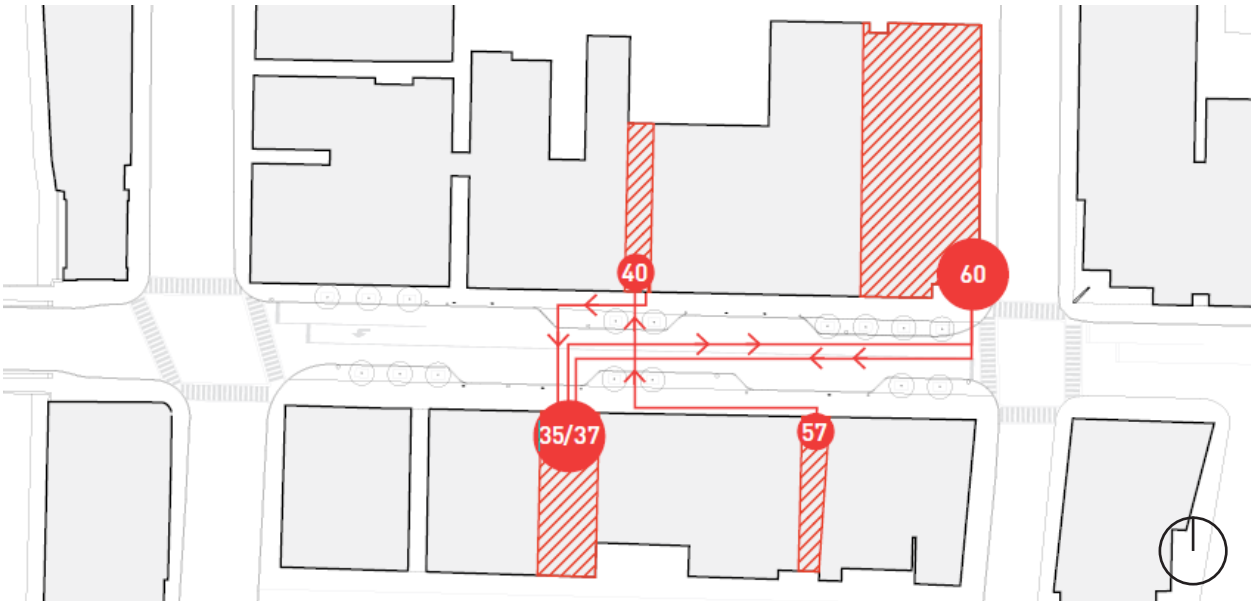


Figure 17: Plan drawing documenting all instances of BRIDGE occupied storefronts along Main St.









Figure 18: 60 Main st. - Image of the exterior facade of the BRIDGE building showcasing the NEST studio work (top left). 60 Main st.- Image of the interior during Robert Jan Van Pelt and Terri Meyer Boake's book launch (top right). 60 Main st. - Interior image of student club F_RM Lab's light installation (bottom left). 35/37 Main st. - Image of Interior during PechaKucha presentations. (bottom right).

The duality of spatial resistance and stability raises an essential question for both architectural education and practice: How can institutions meaningfully support alternative, community-driven architectural approaches without subsuming them into conventional frameworks? While BRIDGE and similar initiatives show that students can navigate and reshape the margins of institutional influence, their temporary nature suggests that without deeper structural shifts, architecture remains tethered to existing economic and institutional hierarchies, even in its most experimental forms.

Although this marked a loss for the students, the school, and the community, it exemplifies a shift from viewing buildings as isolated objects toward understanding them as interconnected structures that leverage socio-spatial connections. Buildings influence networks that, in turn, shape and reshape their environments. These assemblages illustrate how architecture has the potential to operate within and between structures (both physically and socially), fostering dynamic relationships that contribute to a community's broader resilience. When there are overall challenges to an institution, where it may fail or collapse, community resilience becomes a factor that upholds a society's ability to function.

This is akin to the natural process of underground forest networks pioneered by Suzanne Simard, a scientist and professor at the Department of Forest and Conservation Sciences at the University of British Columbia. She found that the underground mycorrhizal networks, a symbiotic relationship between plant roots and fungi, exchange nutrients and information, enhancing the resilience and adaptability of the entire ecosystem (see Fig.19).[57] This relied on its robust and complex connectivity to foster individual resilience when parts of the ecosystem were weakened or threatened. Much like the mycorrhizal networks, the BRIDGE building functioned as a crucial node, fostering connections between the School of Architecture and the downtown core. It facilitated relationships, knowledge exchange, and social interactions that strengthened both students and the broader community, essentially providing additional support when the school could not . The absence of such spaces reveals the fragility of community-driven initiatives and the challenge of maintaining long-term integration between architecture schools and their surrounding environments (see Fig.20).

The loss of BRIDGE following the COVID-19 pandemic underscores the vulnerability of these informal yet impactful interventions. Without a dedicated space to anchor student and community interactions, the continuity of these relationships has weakened, leaving a gap in tangible examples of student agency and local engagement. This raises a critical question: how can architectural education embed these principles of socio-spatial connectivity into its core pedagogy, ensuring that the lessons of BRIDGE are not just temporary experiments but integral to the way future architects design, occupy, and interact with space? This perspective directly challenges the commodified, production-oriented pedagogy prevalent in architectural education, where design is often taught as the creation of static, marketable artifacts with predefined consumer use. Instead, using ANT allows individuals to see architecture as an

57 Suzanne Simard, "How trees talk to each other," TED Talks, August 30th, 2016, video, 18:24, https://www.youtube.com/watch?v=Un2yBglAxYs&ab_channel=TED

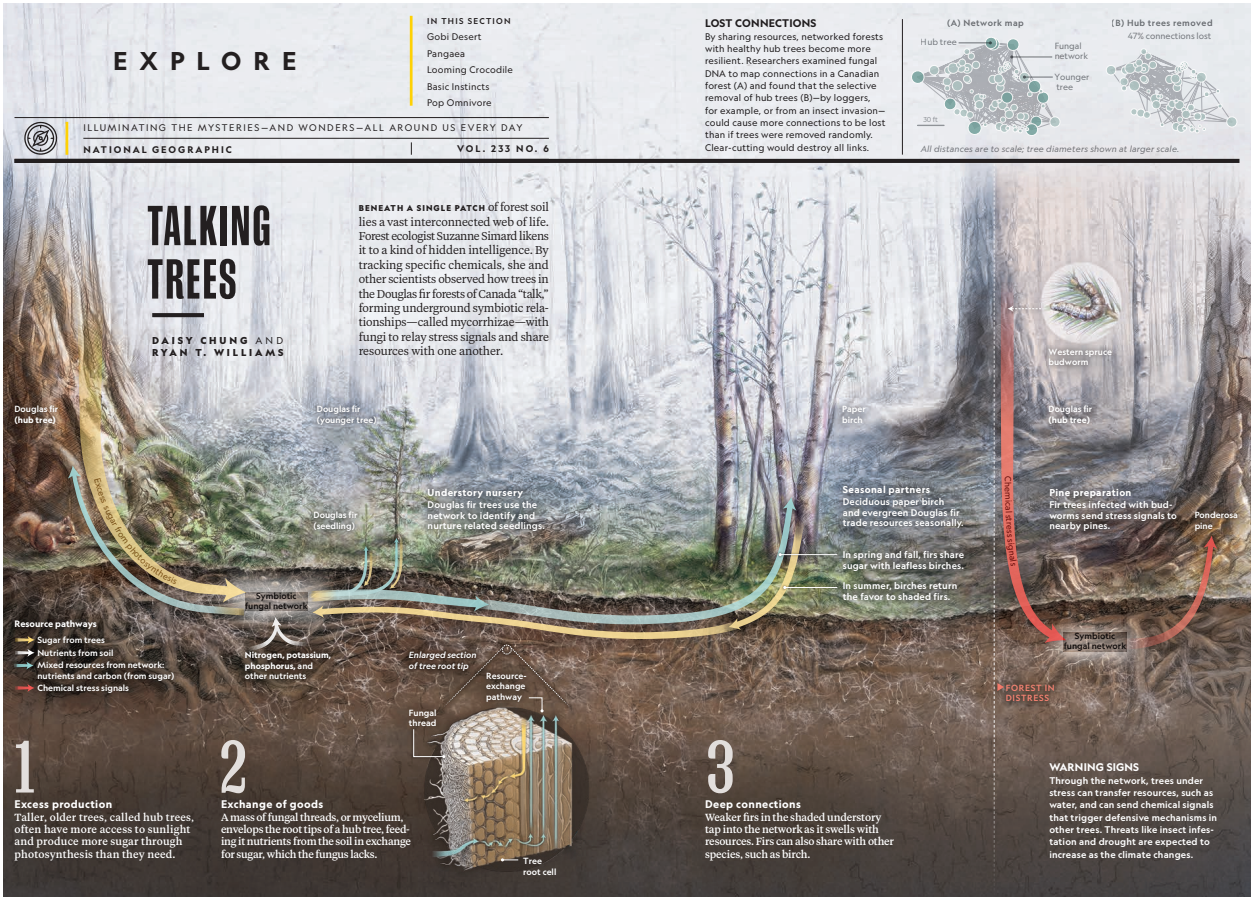


Figure 19: An illustration from *National Geographic* magazine showing how Douglas-fir trees in a forest connect through the mycorrhizal network to transmit stress signals and share resources.

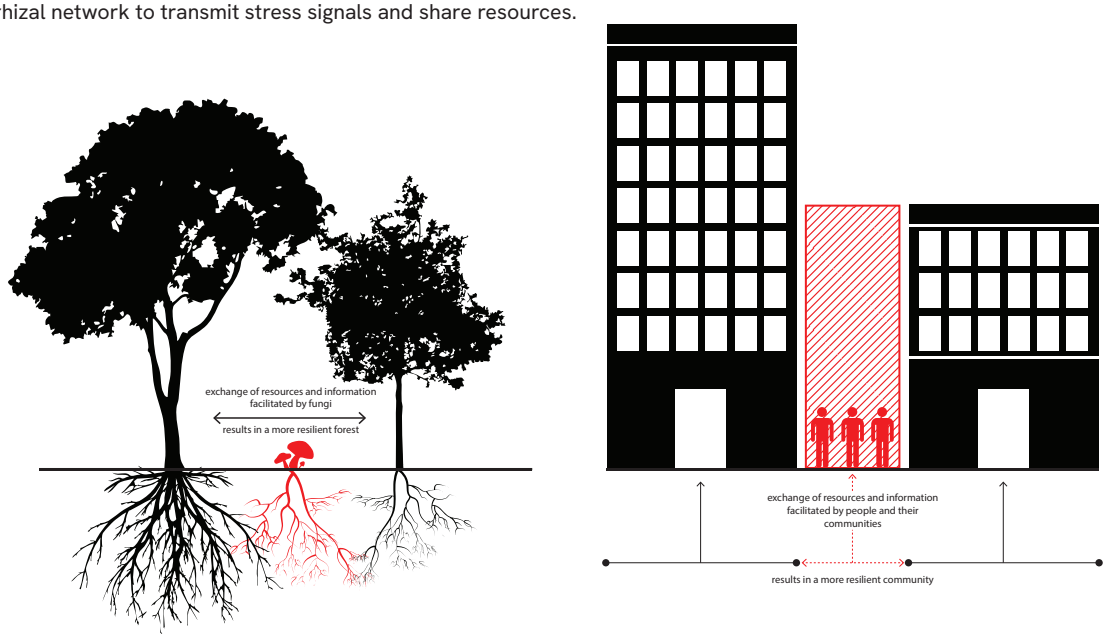


Figure 20: Diagram illustrating the similarities between a resilient forest ecosystem and a resilient community.

ongoing process of negotiation and translation, where meaning and function are co-created through networked interactions of various groups rather than the determinant design of a single object.[58] Doing so encourages architects to reflect on their personal approaches, interactions, and relationships with space, considering the networks formed simply by existing and participating within it. To understand the dynamics of building space, one must first reimagine one's position within it, both physically and socially.

Applications: Toward a Transformative Pedagogy using ANT

Tracing these networks within architecture is inherently challenging, as countless actors and relationships, as well as non-human actors such as building code, zoning, and bureaucracy, contribute to the creation of a built object. However, examining these relationships becomes crucial in the context of pedagogical practices. Educators can cultivate a critical awareness of the socio-material networks that underpin design by integrating ANT into architectural education. This shift challenges the commodification of architecture and empowers students to engage with the complexities of spatial and social dynamics of broader and local contexts. As Latour reminds us, "the social is not a thing but a movement that gathers."[59] In other words, the social should not be seen as a fixed entity that encapsulates actors, but as an ecosystem of evolving relationships that encompasses the act of expansion, collection, and dissemination. Through this lens, architectural pedagogy can develop into a transformative practice that dismantles exploitative hierarchies and fosters a more collaborative approach to design encompassing all entities.

The ANT offers a shift in understanding architecture, not as a static artifact or passive container but as an active participant in dynamic, interconnected networks of human and non-human actors. By challenging traditional hierarchies and emphasizing the distributed agency within these networks, ANT reframes architectural education and practice as evolving processes rather than rigid structures. This perspective demands a critical reassessment of pedagogy, prioritizing experimentation, collaboration, and the exploration of relationships between materials, tools, contexts, and users.

Incorporating ANT into architectural education challenges the commodification of design, encouraging students and educators to view architecture as a process of continual transformation shaped by its interactions and assemblages. This approach expands beyond the limitations of production-based pedagogy, fostering an understanding of architecture as both socially responsive and materially adaptive. By examining these networks and relationships, architectural pedagogy can dismantle exploitative hierarchies, reposition architecture as a mediator of spatial and social realities, and empower a generation of architects to envision and create more equitable and dynamic built environments.

58 Dilaveroglu, A review on Actor network theory, 2021 **59** Latour, *Reassembling the Social*, 2005

Mapping Architectural Networks

Mapping actors in architecture through Actor-Network Theory reveals the complex relationships between human and non-human forces shaping the built environment. It highlights how materials, regulations, climate, and technology actively influence design, challenging a purely human-centric view. This visualization aids in understanding dependencies, anticipating conflicts, and fostering collaboration. In addition, it highlights how certain aspects of architecture might be related, and in drawing these connections, individuals can understand how to navigate its complexity and who or what to approach when faced with challenges. Ultimately, it empowers those in the margins to make sense of the architectural process while framing them away from the bottom of institutionalized capitalist hierarchies. The following diagrams showcase the visualization of Actor-Network Theory through various iterations (see Fig. 21-25).

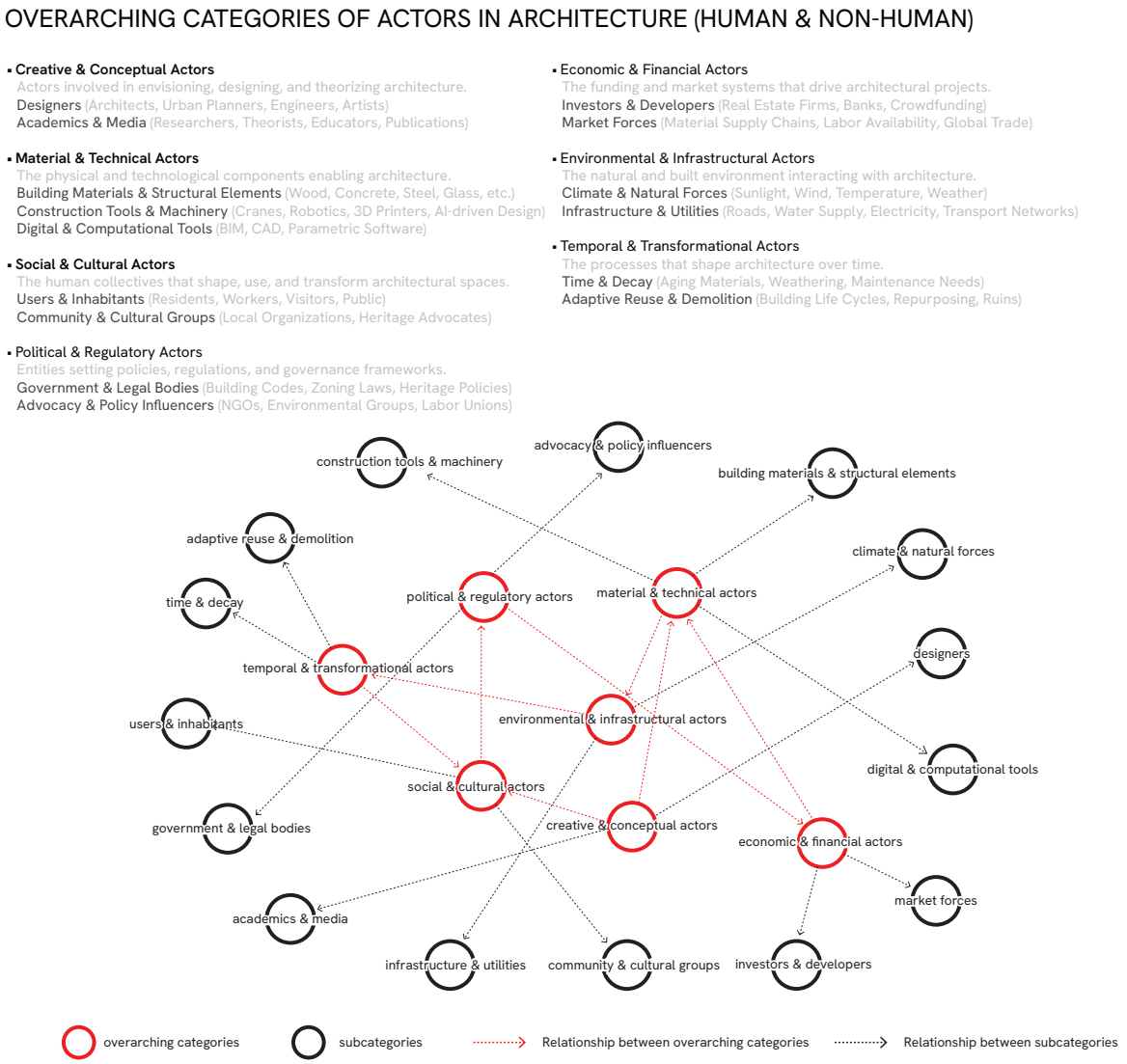


Figure 21: Diagram visualizing the generalized interconnected network of human and non-human actors in architecture.

DESIGN PROFESSIONALS

- **Architects** (e.g., lead designers, urban designers, sustainable architects, interior architects, landscape architects)
- **Drafters and CAD Technicians** (e.g., professionals who convert designs into technical drawings)
- **Urban Planners** (e.g., specialists in zoning, land use, and city-level projects)
- **Interior Designers** (e.g., experts in spatial layouts, furniture arrangement, and interior aesthetics)
- **Landscape Architects** (e.g., designers of outdoor spaces such as parks, gardens, and urban plazas)
- **Industrial Designers** (e.g., creators of specialized architectural components or products)

CLIENTS / STAKEHOLDERS

- **Individual Clients** (e.g., homeowners, private individuals commissioning custom projects)
- **Corporate Clients** (e.g., businesses investing in office spaces, retail environments, or industrial facilities)
- **Developers** (e.g., professionals driving residential, commercial, or mixed-use developments)
- **Government Bodies** (e.g., municipalities funding public infrastructure or civic projects)
- **Community Groups** (e.g., local representatives advocating for neighborhood needs)
- **Investors and Financiers** (e.g., stakeholders providing funding for architectural projects)

ENGINEERS

- **Structural Engineers** (e.g., experts ensuring buildings can withstand forces and stresses)
- **Mechanical Engineers** (e.g., specialists in HVAC systems, elevators, and mechanical infrastructure)
- **Electrical Engineers** (e.g., professionals designing electrical systems, wiring, and lighting)
- **Civil Engineers** (e.g., specialists in site preparation, roads, and utilities)
- **Environmental Engineers** (e.g., consultants focusing on energy efficiency and sustainability)

CONSTRUCTION TEAM

- **Contractors** (e.g., general contractors managing construction processes)
- **Subcontractors** (e.g., specialists in plumbing, electrical work, and roofing)
- **Construction Workers** (e.g., skilled laborers executing physical construction)
- **Fabricators** (e.g., creators of custom components like steel structures or bespoke architectural elements)

CONSULTANTS

- **Sustainability Consultants** (e.g., advisors on LEED or BREEAM certifications)
- **Acoustic Consultants** (e.g., experts optimizing sound quality and noise control)
- **Lighting Designers** (e.g., specialists in artificial and natural lighting systems)
- **Accessibility Experts** (e.g., consultants ensuring ADA compliance)
- **Building Surveyors** (e.g., professionals evaluating structures for renovation or compliance)
- **Cost Consultants/Quantity Surveyors** (e.g., managers of budgets and cost estimates)

ACADEMICS

- **Architecture Professors and Scholars** (e.g., educators influencing design philosophies)
- **Students** (e.g., contributors of fresh ideas and concepts in collaborative projects)
- **Researchers** (e.g., investigators of materials, technologies, history, and culture)

REGULATORY AUTHORITY

- **Planning Authorities** (e.g., officials approving zoning and land-use compliance)
- **Building Inspectors** (e.g., enforcers of building codes and standards)
- **Government Agencies** (e.g., departments overseeing infrastructure, urban development, or environmental policies)
- **Lawyers** (e.g., specialists handling contracts, disputes, and intellectual property)

END USERS

- **Residential Users** (e.g., homeowners and tenants, vulnerable populations, neighborhood residents)
- **Professional and Educational Users** (e.g., employees, customers and clients, students and educators)
- **Healthcare and Wellness Users** (e.g., patients and medical staff, maintenance and facility managers)
- **Cultural, Recreational, and Entertainment Users** (e.g., performers and audiences, tourists, athletes and spectators)
- **Transit and Mobility Users** (e.g., public transit users)
- **Religious and Community Users** (e.g., religious communities, neighborhood residents)

CULTURAL CONTRIBUTORS

- **Artists** (e.g., collaborators on public art installations or integrated artworks)
- **Historians** (e.g., experts preserving heritage or cultural significance)
- **Community Leaders** (e.g., advocates representing local values and interests)

MEDIA SPECIALISTS

- **Marketing Teams** (e.g., professionals promoting architectural projects through campaigns)
- **Journalists and Critics** (e.g., analysts critiquing designs in publications or media)
- **Photographers and Videographers** (e.g., documenters of completed projects for portfolios and press)

LOGISTICS SPECIALISTS

- **Suppliers** (e.g., providers of building materials and furnishings)
- **Transporters** (e.g., specialists delivering materials to construction sites)
- **Retailers** (e.g., distributors of interior finishes and components)

ADVOCACY GROUPS

- **Environmental Activists** (e.g., advocates for sustainable architectural practices)
- **Cultural Preservationists** (e.g., defenders of historic sites and landmarks)
- **Local Advocacy Groups** (e.g., representatives of community interests in projects)

Figure 22: A detailed list of human actors.

TOOLS & TECHNOLOGY

Software

- Computer-Aided Design (CAD) software (e.g., AutoCAD, Rhino, Revit)
- Building Information Modeling (BIM) tools
- Rendering software (e.g., V-Ray, Lumion)
- Simulation software (e.g., energy modeling, structural analysis)
- Virtual Reality (VR) and Augmented Reality (AR) platforms

Hardware

- Laptops, desktops, and workstations
- 3D printers and laser cutters
- Large-format printers for blueprints
- Drones for site surveying and visualization
- Construction tools and equipment (e.g., excavators, cranes)

Digital Platforms

- Cloud storage for collaboration (e.g., Google Drive, Autodesk Cloud)
- Project management tools (e.g., Asana, Trello)
- Communication platforms (e.g., Slack, Microsoft Teams)

MATERIALS

Traditional

- Wood (e.g., timber, plywood)
- Concrete and cement
- Steel and aluminum
- Bricks and mortar
- Glass (e.g., tempered, laminated)

Innovative

- Smart materials (e.g., thermochromic glass, self-healing concrete)
- Sustainable materials (e.g., bamboo, cross-laminated timber, mycelium)
- Recycled materials (e.g., reclaimed wood, plastic composites)
- Advanced composites (e.g., carbon fiber, fiberglass)
- Insulation materials (e.g., aerogels, spray foam)

OBJECTS

- Furniture (e.g., residential, office, public)
- Fxtures (e.g., Lighting, plumbing, door hardware)
- Appliances (e.g., kitchen, laundry, HVAC, entertainment)
- Outdoor and urban objects (e.g., landscape and street elements)
- Decorative (e.g., art, accessories, cultural artifacts)

GREEN SYSTEMS

- Renewable energy systems (e.g., solar panels, wind turbines)
- Waste management systems
- Environmental monitoring devices (e.g., air quality sensors)
- Green certifications (e.g., LEED, BREEAM)
- Carbon footprint calculators

REGULATORY ARTIFACTS

- Building codes and standards (e.g., fire safety, structural integrity)
- Zoning laws and planning regulations
- Environmental assessment reports
- Permits and legal documentation
- Architectural guidelines (e.g., ADA compliance, LEED certification)
- Historical preservation standards

INFRASTRUCTURE

- Utility networks (e.g., water supply, electrical grids, sewage systems)
- Transportation systems (e.g., roads, railways, airports)
- Communication networks (e.g., fiber optic cables, satellite systems)
- Urban infrastructure (e.g., parks, plazas, drainage systems)

CULTURAL

- Historical references (e.g., architectural precedents, styles)
- Cultural heritage sites and artifacts
- Religious symbols and elements
- Art installations integrated into designs

PHYSICAL SPACES

- Construction sites
- Existing buildings and structures
- Urban contexts (e.g., neighborhoods, cities)
- Indoor and outdoor spaces under consideration

MEDIA

- Architectural models (physical and digital)
- Presentation boards and portfolios
- Sketches and technical drawings
- Visualizations (e.g., photorealistic renders, diagrams)
- Marketing materials (e.g., brochures, websites)

DATA & ANALYTICS

- Site analysis data (e.g., GIS maps, traffic patterns)
- Demographic information
- Sensor data from smart buildings
- Usage patterns and occupancy analytics
- Feedback from post-occupancy evaluations

ECONOMIC FACTORS

- Budgets and financial forecasts
- Construction cost estimators and calculators
- Material pricing databases
- Real estate market data
- Insurance documents and policies

MANUFACTURING

- Prefabricated components (e.g., modular building units)
- Local and global material suppliers
- Transportation systems for material delivery
- Factory settings for custom architectural elements

Figure 23: A detailed list of non-human actors.

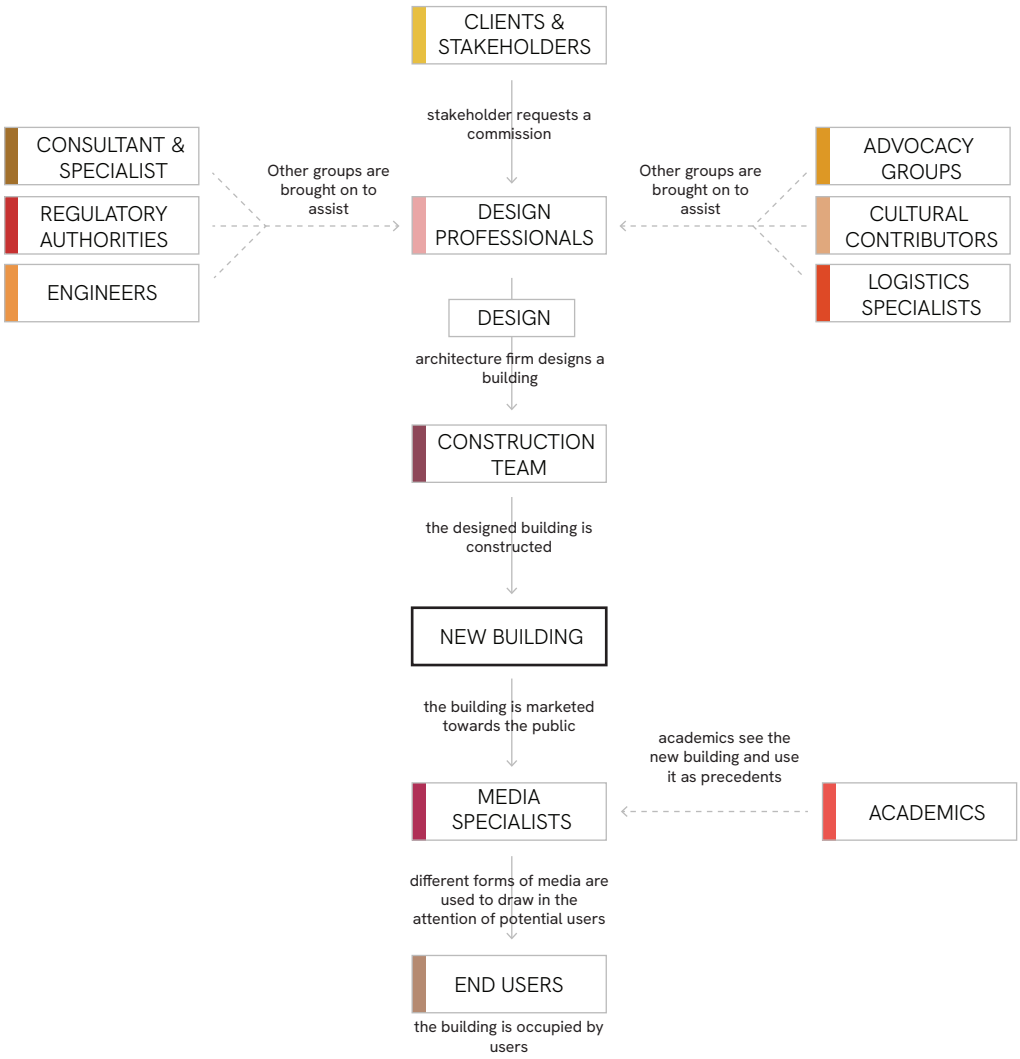


Figure 24: Expanded diagram of typical architectural social structures. This type of social structure is a common practice, putting focus on the heirarchy of human actors.

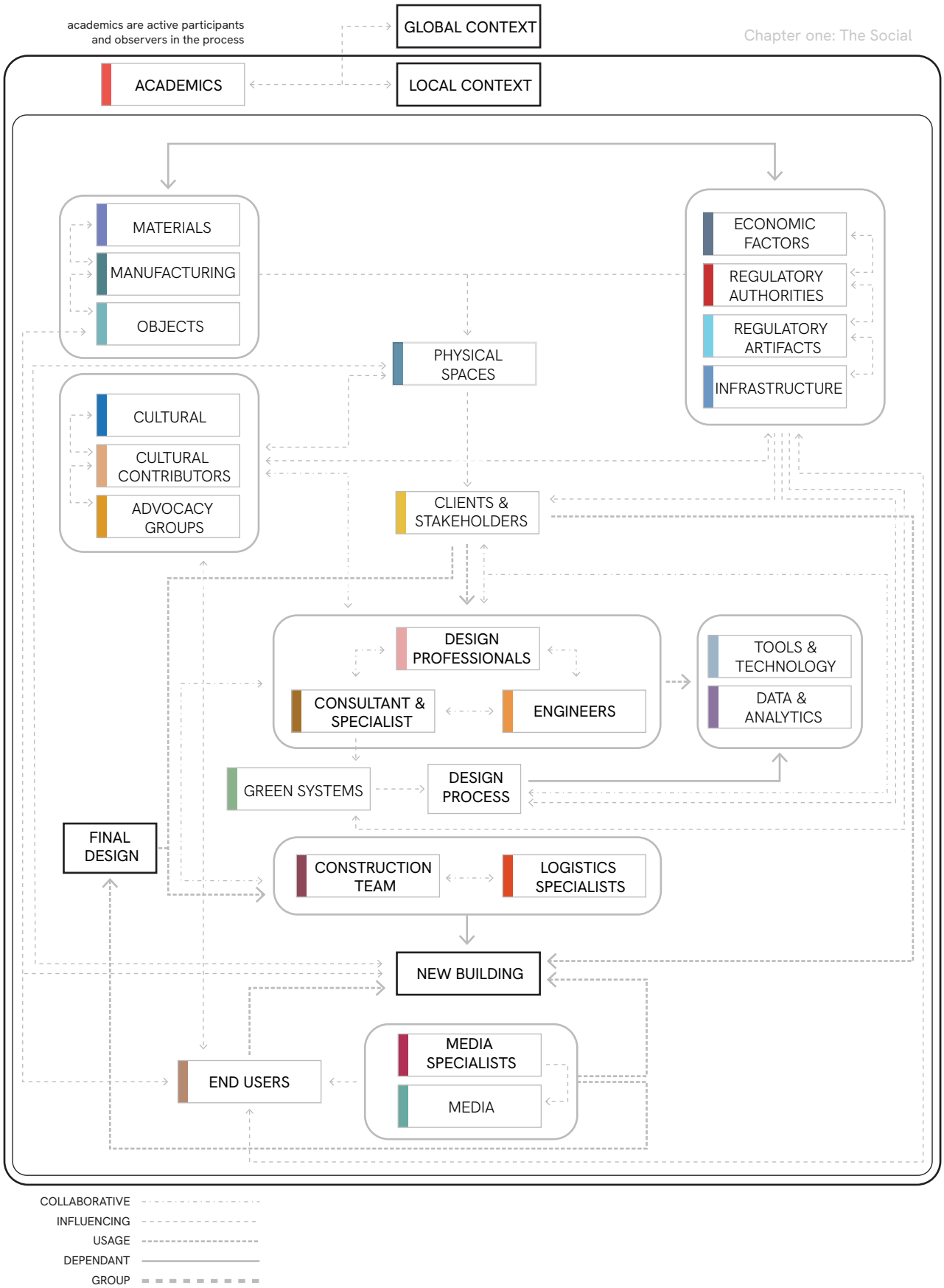
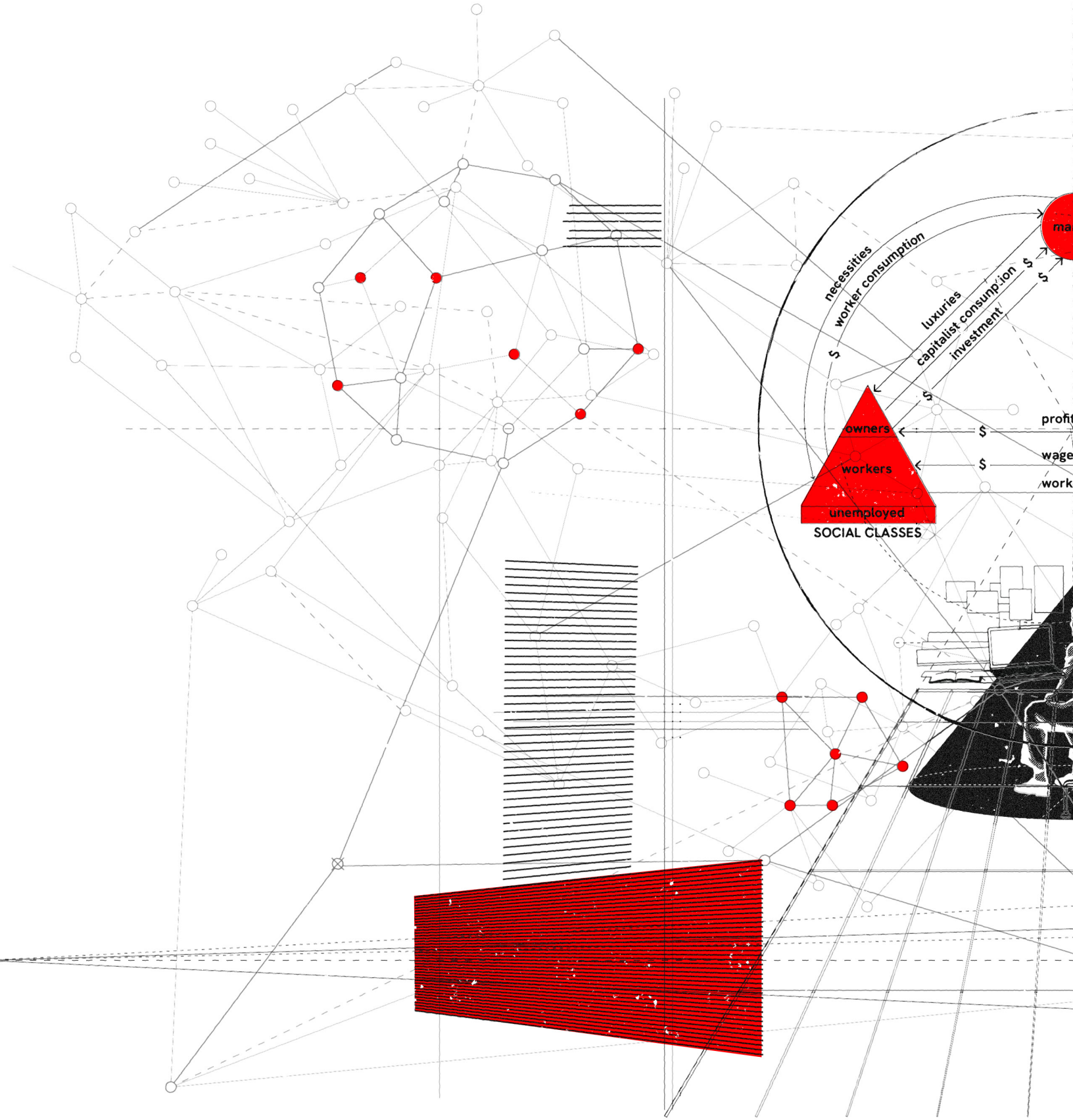
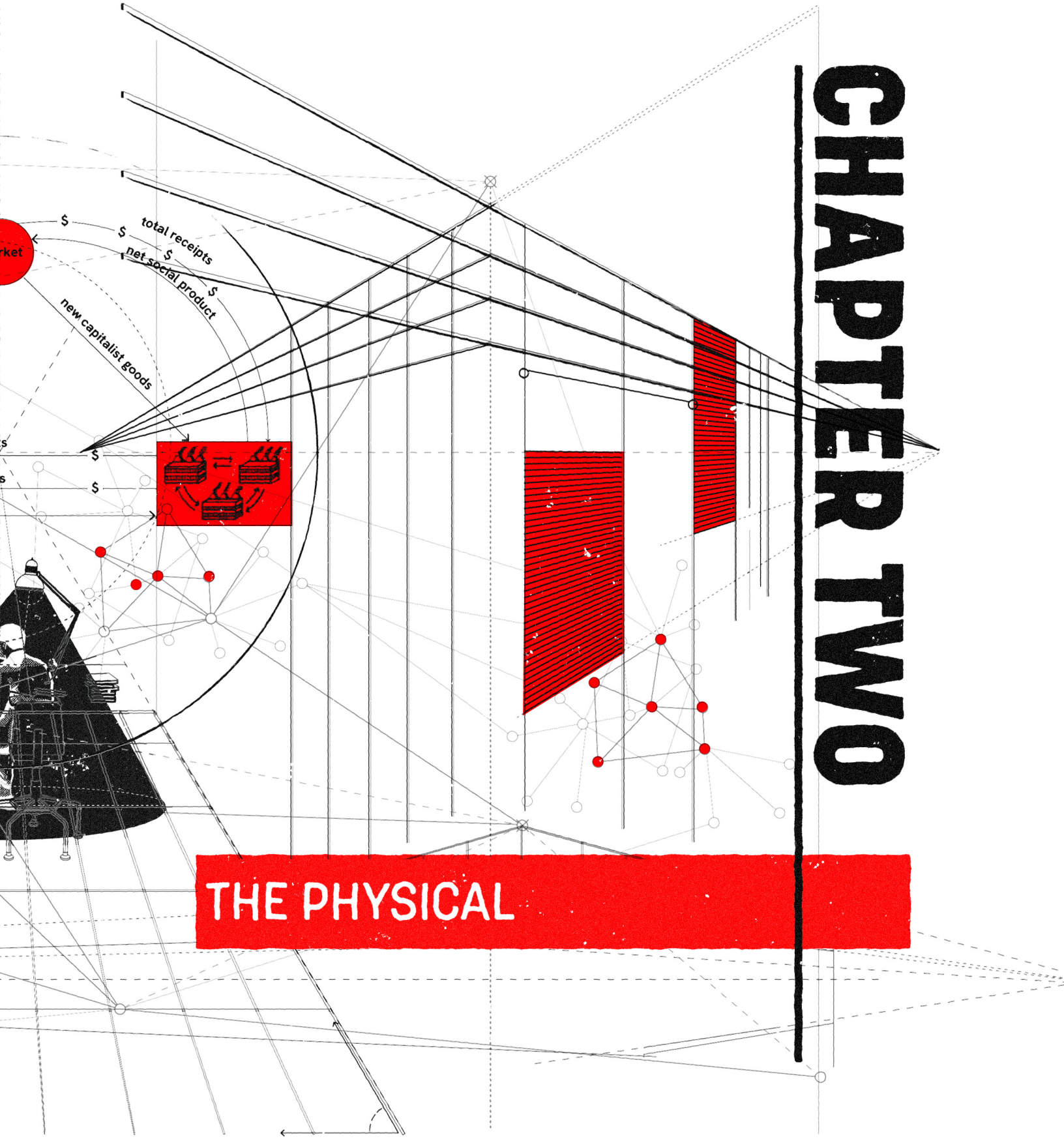


Figure 25: Expanded diagram of the Actor Network Theory applied to architectural networks.


necessities
worker consumption
luxuries
capitalist consumption
investment
$
owners
workers
unemployed
SOCIAL CLASSES
profit
wage
work



CHAPTER TWO

THE PHYSICAL

Introduction

The previous chapter examined an alternative understanding of the social dimension through Latour's Actor-Network Theory (ANT). It used this mechanism to reframe social relationships and challenge conventional understandings of actors and their interactions. While that investigation centred on networks and their societal influences, this chapter draws its focus to the non-human actors within these systems and their evolution alongside their human counterparts, both physically and conceptually.

In ANT, the concept of translation is central. It explores how actors adapt and reinterpret goals within a network, reflecting the fluidity of their roles and relationships. Latour, along with Albena Yaneva, a professor of architectural theory at the University of Manchester, expand on this idea in their collaborative work *Give Me a Gun and I Will Make All Buildings Move*, where they critique the static portrayal of buildings in architectural representation. They draw an analogy to Étienne-Jules Marey, a French scientist, physiologist, and Chrono photographer, and his sequential documentation of a gull in flight, which freezes dynamic motion into static frames (see Fig. 26).[60] The authors argue that buildings require the reverse treatment: though they appear static, they are inherently dynamic and continuously in a state of transformation. They encapsulate this perspective, asserting:

> *...a building is not a static object but a moving project, and that even once it has been built, it ages, it is transformed by its users, modified by all of what happens inside and outside, and that it will pass or be renovated, adulterated and transformed beyond recognition.* (p. 80).[61]

This highlights several ways buildings change through direct translation from concept to construction, transformation over time from weather and climate, shifts in users and functionality, or physical renovations and modifications. The authors critique that the static perception of buildings, which they attribute to representational strategies, often lead viewers to equate geometric accuracy with objective truth. The authors explain that this process frequently overlooks the realities of inhabitation and adaptation, reducing architecture to an abstract ideal detached from its embodied and transformative nature.[62]

The industry of architecture and the ideas of production are prominent in how architecture is taught and represented. Much of the profession relies on the ability to communicate with clients, co-workers, contractors, etc., which relies heavily on simplicity, legibility, and objectivity. These elements all revolve around the idea of building production and the optimization of the building construction processes. Why include dynamic drawings that include social behaviours, when standardization, efficiency, and legibility are required to build something? Although these aspects are necessary for constructing a physical building, this contemporary approach to production has permeated into architectural pedagogy and taken away from its conceptual potential. A move towards a more dynamic approach to representation involves more expressive visualization paired with traditional drawing methods to capture both the objective and subjective (see Fig. 27-28). In doing so, drawing can be re-

60 Latour, Bruno and Albena Yaneva, "Give Me a Gun and I Will Make All Buildings Move: An ANT's View of Architecture" *In Architectural Theories of the Environment,* Ed. Ariane Lourie Harrison, 80-89. New York, NY: Routledge, Taylor & Francis Group, 2013.

61 Ibid

62 Latour and Yaneva, Give me a gun, 2008.



Figure 26: Étienne-Jules Marey's documentation of a gull in flight (1886): This image captures sequential images of a gull midflight. It has been used to study the motion of the bird and understanding its flight.



Figure 27: Drawing made by Mar Hernández which explores the transformations of interior domestic spaces. Illustrating the themes of past experiences and potential futures.

oriented away from being seen as a process of production but rather as an investigation.

For instance, orthographic drawings such as plans, sections, and elevations are essential in construction documents, serving as instruments of translation between design intent and built form. Their clarity ensures efficiency and facilitates communication between architects, developers, and contractors, streamlining the construction process to fit within rigid economic frameworks. While necessary for coordination, these standardized methods prioritize geometric precision as an objective truth, reinforcing an architecture valued primarily for its ability to be efficiently produced and commodified.

By privileging abstraction and legibility over the complexities of inhabitation and transformation, these representational techniques reduce buildings to fixed commodities rather than evolving spatial conditions. This perpetuates an architectural discourse centred on production and exchange, where success is measured by efficiency, scalability, and market viability rather than adaptability or social engagement. While construction drawings must maintain clarity to function within industry expectations, their dominance as the primary mode of representation often limits architectural thinking, prioritizing output over lived experience and reinforcing a capitalist-driven approach to design.

Although it is commonly understood that buildings are not static, as they experience time alongside humans, the expectation of representational reality often takes priority over lived realities and the innate formation of architecture. Mohsen Mostafavi, former dean of The Harvard Graduate School of Design, and David Leatherbarrow, professor at the University of Pennsylvania School of Design, examine the physical transformation of buildings in their book, *On Weathering: The Life of Buildings in Time*. They explain that weathering prevents a building from reaching a definitive final state, disrupting the conventional belief of architectural completeness.[63] By accepting weathering as an inevitable and integral part of a structure's development rather than an external force working against it, they propose a new perspective where construction is a continuous evolution.[64]

Moreover, Stewart Brand's *How Buildings Learn* introduces shearing layers, a framework that reveals how different components of a building change at varying rates, challenging the notion of architecture as a static entity. He identifies six layers: site, which is the most permanent; structure, lasting for centuries but difficult to alter; skin, or the exterior, which is periodically updated; services, such as plumbing and electrical systems, which require frequent upgrades; space plan, the interior layout that evolves with occupant needs; and stuff, the most transient layer, encompassing furniture and décor (see Fig. 29). This model highlights how buildings are not fixed objects but constantly evolving systems, where different elements adapt to environmental, technological, and social changes. Brand critiques the architectural tendency to prioritize structure and aesthetics over adaptability, arguing that rigid, over-designed buildings often become obsolete when they fail to accommodate inevitable modifications. By recognizing buildings as living, responsive environments, he advocates for a more flexible approach that prioritizes long-term usability and change rather than a static vision of design.[65]

63 Mostafavi, Mohsen, and David Leatherbarrow. *On weathering: The life of buildings in Time*. Cambridge, Mass: MIT Press, 2001.

64 Ibid

65 Brand, Stewart. *How buildings learn: And fail to learn*. New York, NY: Viking, 1994.

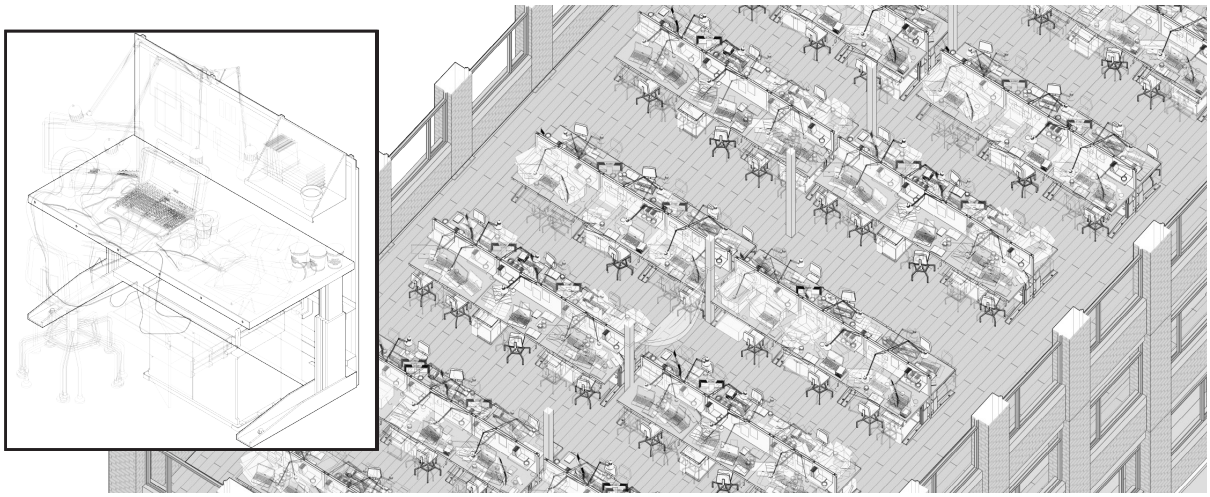


Figure 28: Drawing made by author of the University of Waterloo School of Architecture Undergraduate Studio and studio desk as seen through a temporalized lens. Using the conventional axonometric drawing style while layering desk layouts throughout a term, these drawings emphasize the lived experiences and dynamic nature of occupancy.

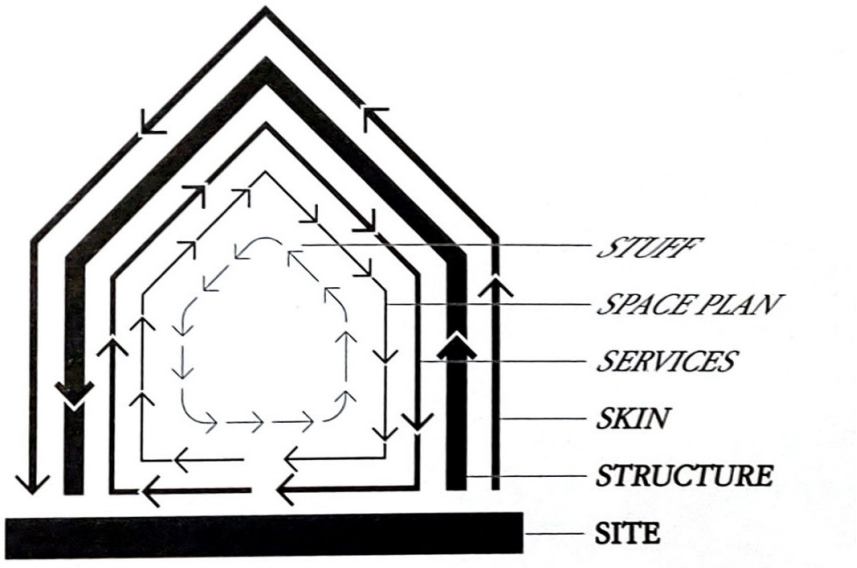


Figure 29: : Stewart Brand's diagram on the six Shearing Layers

While Latour and Yaneva's concepts mainly focus on representation, Mostafavi and Leatherbarrow on materiality, and Brand on physicality, these authors assert one central idea: they argue that a building does not have a final state after construction, ultimately viewing it as a container or vessel that adapts and evolves within its given network of human and non-human actors, such as their examples of adaptation (human) and material weathering (non-human). By viewing buildings as transient objects or dynamic containers, architectural pedagogy and practice can be reoriented to embrace their inherent fluidity. Rather than treating structures as static endpoints in the design process, this perspective acknowledges them as continuous entities shaped by human interactions, material transformations, and shifting contextual conditions. It lends itself to widening the scope of representational strategies, which can incorporate flexibility, use overtime, interchangeability, and user modifications, making a building more resilient overall. Be that as it may, it raises the question of why buildings are so often perceived and interpreted as static and how pedagogical practices may play a role in perpetuating this mindset.

From Static to Dynamic Architecture

In architecture, Euclidean Space is fundamental in representing physical space through coordinates, lines, and planes, allowing geometry to be "created" in the X, Y, and Z axes (see Fig. 30). It is the process by which architects and designers create their designs. Examples include 3D modelling software such as Rhino, AutoCAD, or Revit, which generate geometries in two or three dimensions. However, what these computer programs and Euclidean Space fail to capture about the natural world is the fourth dimension, or in other words, time, and the ability to account for lived experience within three-dimensionality. One key aspect often missing from architectural representations, mainly in their finalized drawings, is the role of social, economic, and political factors in shaping buildings. Sarah Wigglesworth, an architect and professor, notes the challenges of orthographic drawings in the following:

> [orthographic projection] privileges static space and time, ideality and, of course, predictability. But in doing so, it closes down unexpected action, making assumptions about rituals and cultural preferences that may not actually pertain. In so doing it closes our eyes to diverse ways of understanding the world.[66]

These factors not only shape a building's initial design but also have the potential to continue to influence it long after construction. Moreover, the absence of the personal dimension in objective drawing methods often eliminates the subjectivity and personal experience of those interacting with the space (see Fig. 31).

Although Latour and Yaneva do not inherently state how to create such drawings, their insights lend themselves to broadening the narrow scope of architectural interpretation. Considerations towards a layered approach to drawings, similar to the shear layers of Brand, may lend themselves to capturing a broader range of elements without completely neglecting the need for straightforward drawings. These applied to both professional construction documents and

66 Wigglesworth, Sarah. "The Disorder of the Dining Table." *UOU scientific journal* 4 (2022). https://doi.org/10.14198/uou.2022.4.12.

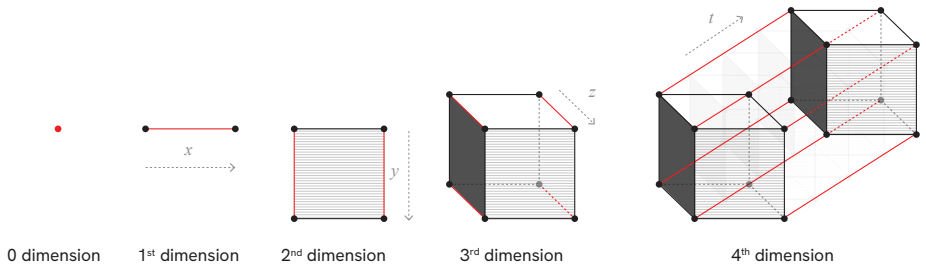


Figure 30: Diagram illustrating the various dimensions of Euclidean space and temporality of the fourth dimenson.

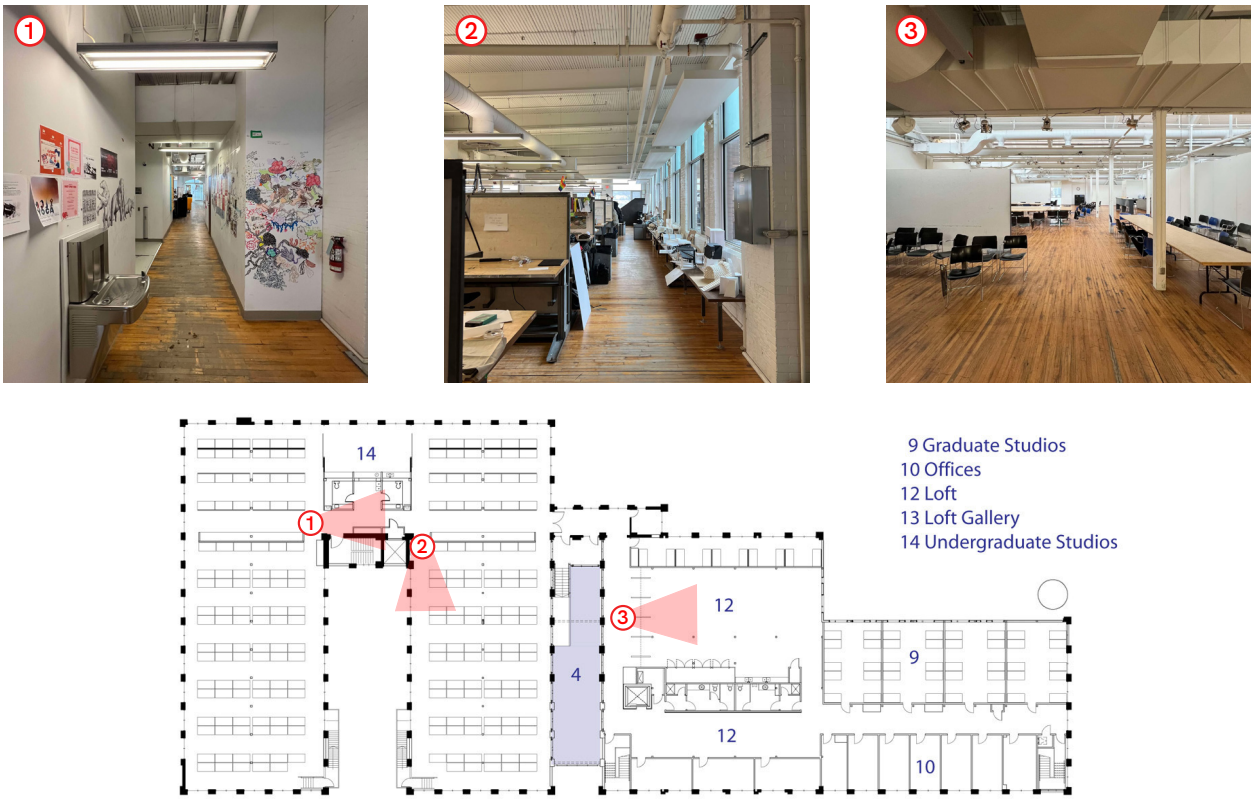


Figure 31: Photographs and plan drawings of the third floor at the University of Waterloo School of Architecture highlight the contrast between orthographic representation and lived reality. The drawings on the walls and studio desks change and evolve over each subsequent term.

speculative drawings from students showcase a level of care and consideration that may not always be visible in standardized drawings. This dynamic approach challenges the conventional reliance on static idealisms. Moreover, these interactions emphasize that a building's identity is not confined to its physical structure but is equal to the sum of its actions and influences within its network. It resists, adapts, facilitates, and challenges while engaging with various actors.

Before a building is constructed or even drawn, it must be designed. This is not a simple linear process but involves various phases of iteration and development (see Fig. 32). The act of design is a haptic and tactile exploration of different media chosen by the designer. Whether through model-making, collaging, or sketching, each motion, every cut, and every line is a gestural act that slowly shapes and manifests the designer's vision into a physical artifact. The alternating dialogue between drawing, contextualization, and model-making leads to the emergence of a building proposal. However, the final drawings and images often omit the exploration, development, and evolution phases that shaped the design. These two phases, finalized and developed, can represent the design's objective and subjective aspects. They reflect a building's static nature versus its dynamic, evolving form. As Latour and Yaneva suggest, the challenge is finding a way to represent both the static and the dynamic, the subjective and the objective. How can a static building and a building in motion be combined to reflect the multidimensional reality of creation, lived experience, and organic contexts?

As an example of this application, Sarah Wigglesworth created a series of drawings called *"The Disorder of the Dining Table,"* created in collaboration with Jeremy Till, another architect, educator and author, which challenges traditional architectural representation by illustrating how domestic spaces evolve through human interactions and time (see Fig. 33). These drawings depict the transformation of a dining table through various stages, from a perfectly set arrangement to the activity of a meal and the aftermath of dining. This progression highlights how human interactions and temporal changes continually shape spaces. Wigglesworth and Till emphasize that architecture should account for human activities' unpredictable, creative and evolving nature. This perspective encourages architects to design spaces adaptable and responsive to the complexities of daily use. Furthermore, the drawings critique the conventional notion of order in architecture. They suggest embracing the "disorder" inherent in daily life can lead to more meaningful and functional design solutions. It advocates for a shift in architectural practice towards embracing the dynamic and transient aspects of lived experiences.[67]

However, translating the dynamics of architecture into a representational strategy can be challenging. But, by actively engaging with this challenge, whether in practical application or conceptual exploration, architectural pedagogy can move towards a more fluid and responsive approach. The work of Wigglesworth and Till exemplifies a direct, layered approach to spatial evolution but poses a challenge when translated into a legible building design. Alternatively relating back to the work of Étienne-Jules Marey, a method can be taken to capture moments of time which incorporate elements of social interactions, dynamic evolution, and temporal progression. This may not be present on construction drawing sets but may accompany them

67 Wigglesworth, The Disorder, 2022.

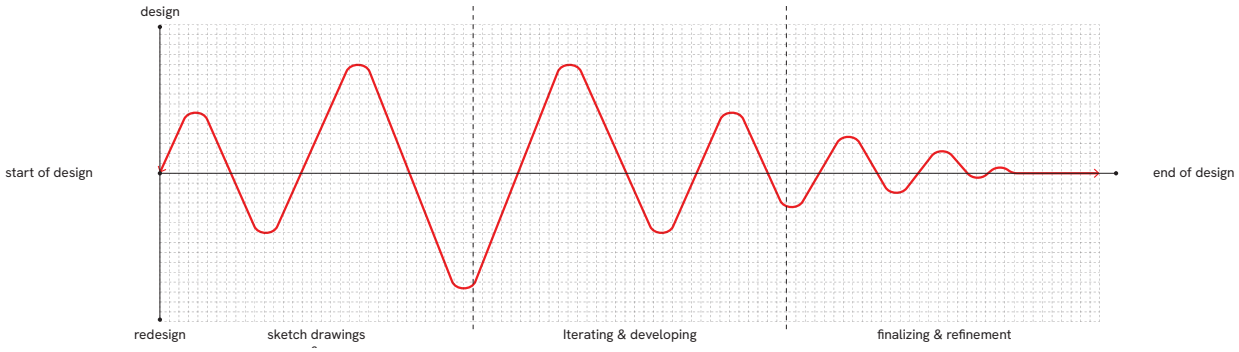


Figure 32: This graph illustrates the process of design as a non-linear process, where the act of design and redesign propel the project to its finalized state.

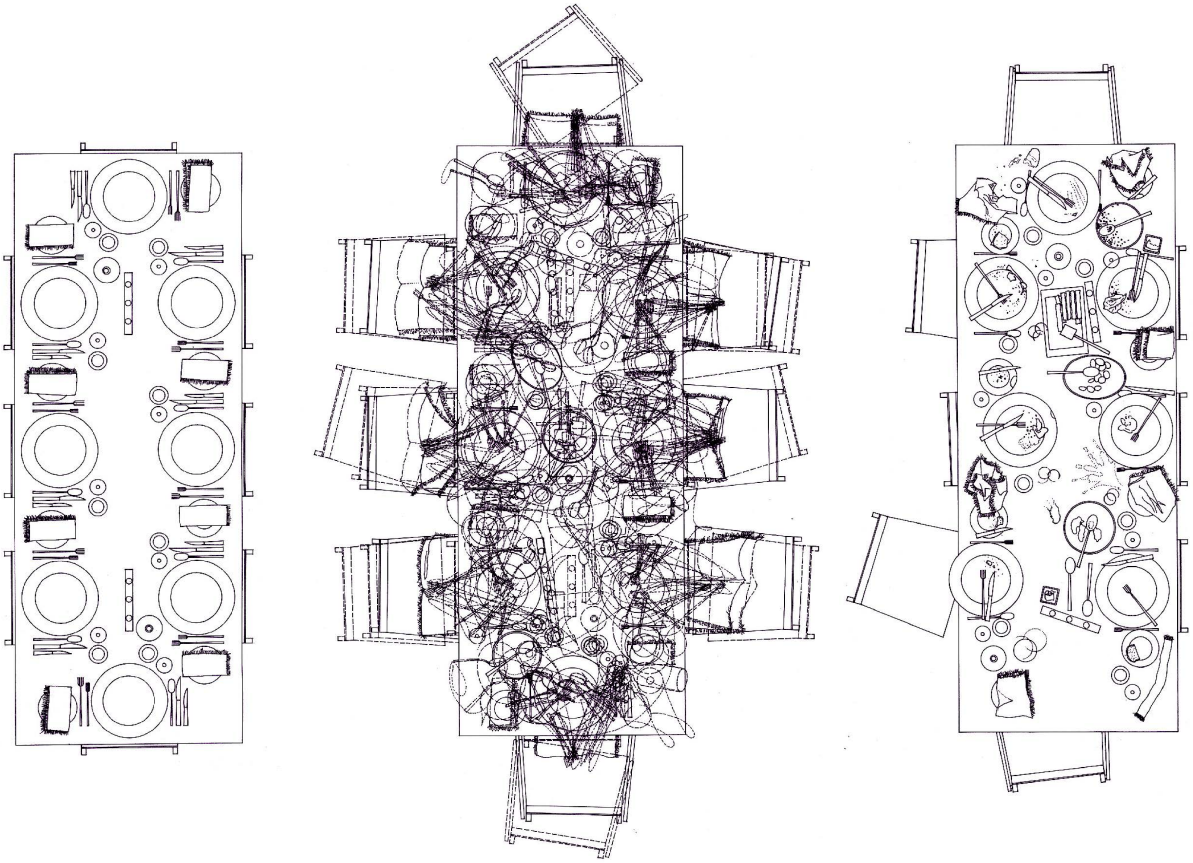


Figure 33: The Everyday and Architecture(1997): "The Disorder of the Dining Table," a series of drawings from Sarah Wigglesworth documenting the dynamic nature of a dinner table, setting an example of representational techniques for architecture in motion.

to highlight usage and inform programmatic function.

The representation of evolution can then be seen as an integral part of the development of space, as its many actors can influence and change its intended use. Space and objects will naturally evolve when occupied, engaged or by simply existing within time. The subconscious needs of the individual will generate the desired function despite its initial prescribed nature. Architects and designers, in acknowledging these ongoing transformations, can critically engage with the intricacies of space by bridging the gap between static representation and lived experience, but to do so, they must first understand how space is produced.

Production of Space

In his book *The Production of Space*, the French Marxist philosopher Henri Lefebvre explores the political, social, and psychological aspects that define the production of space. He proposes that space is a social product and categorizes it into three interconnected dimensions: Perceived Space, Conceived Space, and Lived Space. These dimensions engage in a dialogue between quotidian practices, perceptions, representations, and spatial imaginations over time (see Fig. 34).[68]

Spatial Practice (Perceived Space): Physical
This dimension refers to how space is materially and physically used in daily life, encompassing the routes, activities, and routines individuals follow. It focuses on the practical and functional aspects of space, such as how streets, buildings, and public areas are utilized. Spatial practice embodies people's lived experiences and physical interactions with their environment.[69]

Representations of Space (Conceived Space): Mental
This dimension relates to how space is conceptualized and planned by professionals such as urban planners, architects, and scientists. It represents the abstract, mental dimension of space, often tied to authority and control. Representations of space are embodied in maps, blueprints, zoning regulations, and urban designs, serving those who hold power to structure and dictate the use of space.[70]

Spaces of Representation (Lived Space): Social
This dimension addresses space as it is experienced and imbued with symbolic meaning. It encompasses imagination, emotions, memories, and cultural expressions. Lived space reflects how individuals and groups interact with space in ways that may resist or subvert dominant systems. For example, a park conceptualized as a recreational area may be used for protests or festivals, transforming its meaning for those who inhabit it.[71]

Lefebvre challenges the notion of space as an empty container waiting to be filled, arguing instead that it is shaped by the interactions of various actors, institutions, and power structures (see Fig. 35). He emphasizes that space is a social product, intricately tied to the dynamics of capitalism and production. As previously noted, the visual representation of architecture often reflects these dynamics through its emphasis on simplicity and efficiency. Lefebvre attributes this issue to the mental, or conceived, space. He warns that when mental space is divorced from reality, it serves political agendas that shape social relationships and reinforce hierarchies of power.[72]

68 Lefebvre, Henri. *The production of space.* Translated by Donald Nicholson-Smith. Oxford, OX, UK: Blackwell, 2017.

69 Ibid

70 Ibid

71 Ibid

72 Ibid

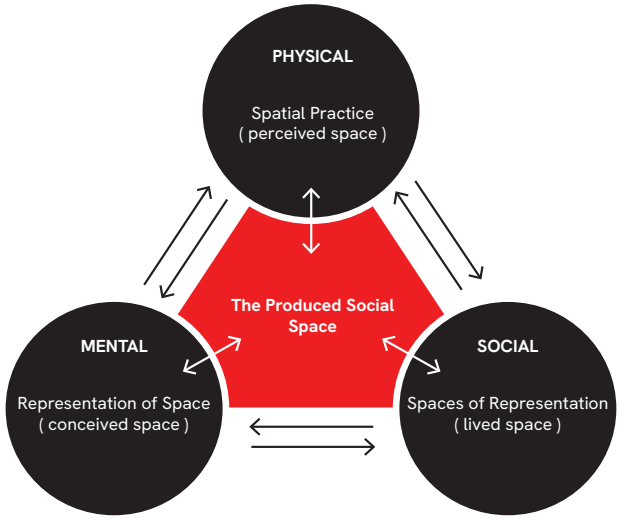


Figure 34: Diagram illustrating the connection between Henri Lefebvre's production of space, which all revolve around it's connections to perceived space, conceived space, and lived space.

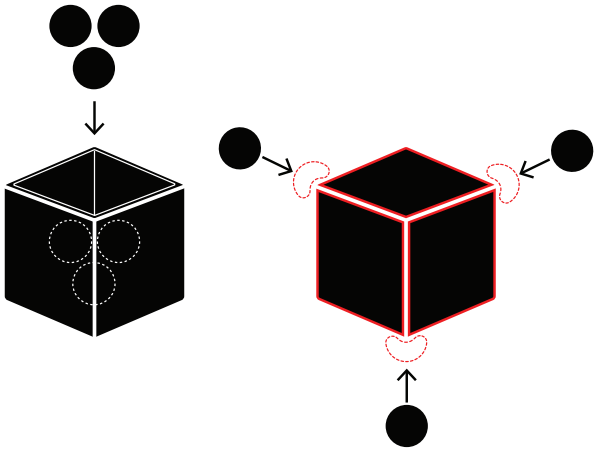


Figure 35: Diagram showcasing the difference between architecture seen as a container versus shaped by social products. Architecture seen as a container can be restrictive whereas the act of shaping lends itself to an increased sense of agency.

Drawing on the works of Marx and Friedrich Nietzsche, another well-known German philosophers, Lefebvre suggests that space evolves through a continual dialectic relationship between the mental, physical, and social dimensions. However, he critiques capitalist society for privileging abstract space, prioritizing the mental dimension over the physical and social. This abstraction reduces the world to a homogeneous grid, with the center determining the value of surrounding spaces. For instance, Lefebvre uses the suburb as an example of abstraction, where cultural significance and diversity are diminished as they lie on the periphery of large cities (see Fig. 36). Similarly, he critiques coastal areas and their reduction to mass tourist destinations, stripping them of their unique identities and local character. In both cases, significance and cultural value are exchanged for capital.[73] Viewing architecture through this lens reveals how capitalist frameworks shape urban spaces, as well as the organization and use of buildings within their networks. While Lefebvre's work primarily addresses large-scale urban environments, his theories can also be applied to buildings and their programmatic functions.

Static representation in architecture runs adjacent to the aspect of mental space, which governs the overall planning and conceptualization of space. If Lefebvre argues that mental space is responsible for establishing manipulation and hierarchies of power, then the very drawings used to convey these notions of control can be seen as equally responsible, as they are the physical manifestation of mental space. When architects detach themselves from the emphasis on abstraction and prioritization of the conceived space, then an equilibrium can be formed between lived and perceived space. This can be viewed as the manifestation of dynamic space, where the conceived, perceived and lived experiences share equal precedents. In acknowledging these three dimensions of space, architecture has the capacity to the reframe itself away from capitalist values by reducing the notion of control and limiting its emphasis on production. Instead, design becomes an iterative process of investigation and a strategy to incorporate the contributions and effects of various actors. This shift has the potential to mitigate marginalization by integrating diverse perspectives from the perceived and lived realms, empowering those in the margins to navigate and challenge static structures while embracing the dynamic nature of space.

Applications: Architectural Appropriation

This process aligns closely with architectural spatial appropriation, the practice of redefining and repurposing space to meet new needs and possibilities. Within the scope of this thesis, the term appropriation is recognized for its negative connotations, particularly in relation to cultural and social injustices. However, in the context of this thesis, an alternate definition of the word appropriation (denoting agency) is used, highlighting the human capacity to rethink and repurpose spaces in ways that diverge from conventional practices. This, combined with acknowledging temporality, can be a tool for deconstructing capitalist hierarchies. Spatial appropriation challenges the notion of buildings as fixed commodities by acknowledging their fluidity and adaptability, understanding that there is no final product and that a building can be used and appropriated before and after its "final state."

73 Lefebvre, Henri. *The production of space.* Translated by Donald Nicholson-Smith. Oxford, OX, UK: Blackwell, 2017.



Figure 36: An aerial photograph of houses located in Oshawa, Ontario, displaying the grid like distribution of suburban neighbourhoods devoid of culture.

To counteract these influences, spatial appropriation becomes an essential methodology for reclaiming spaces and challenging the dominance of abstract, capitalist-driven frameworks. It disrupts these systems, allowing spaces to evolve organically through lived experiences and interactions rather than being dictated solely by political or economic agendas For example, during the squatting movement in Amsterdam in the 1970s, people employed improvisational and collective spatial strategies to resist authoritarian policies. They argued that the right to livable space outweighed the right to ownership.[74] In *Architectural Appropriation* by Renee Boer, the squatting practices in Amsterdam from the 20th to the 21st century are explored, highlighting how both architects and non-architects contributed to alternative spatial practices and political possibilities. The book outlines seven key steps for establishing a successful squat, providing practical knowledge for circumventing some of the country's restrictive squatting laws. To preserve and document these transient structures, architects and squatters collaborated in an annotation session, where the plans of the occupied buildings were provided, allowing the squatters to mark memories, programs, and reflections onto floor plans of their spaces (see Fig. 37). This process not only preserved the architectural movement but also served as a political statement, offering potential legal relevance in future court cases.[75] In addition, this exercise re-conceptualized the understanding of orthographic drawings, per Wigglesworth's initial comments, which see's the overlay of diverse rituals and cultures established by the squatters. It displays the dynamism of lived experiences over the static preconceived plans.

Spatial appropriation serves as a powerful tool to deconstruct capitalist hierarchies by shifting control over space from those who design and legislate it to the individuals and communities who inhabit and transform it. Lefebvre's concept of the production of space highlights how capitalist frameworks prioritize conceived, abstract space, reinforcing power structures that commodify and homogenize environments. This methodology counters these practices by reintroducing lived and perceived spaces as critical dimensions, allowing users to redefine the meaning and function of their surroundings. The squatting movement in Amsterdam exemplifies this, demonstrating how collective action and improvisation can resist the dominance of ownership and capitalist control. By occupying and reimagining spaces, squatters reclaimed agency over their environments, turning spaces bound by the forces of oppression into symbols of resistance and possibility.

Ultimately, spatial appropriation challenges the authority of determinant design, reducing the emphasis on static, predefined functions and fostering dynamic, user-driven adaptations. This approach not only subverts capitalist production but also creates opportunities for new social and spatial relationships to emerge. By empowering individuals to take ownership of their environments, appropriation transforms the process of creating and designing architecture into a collaborative and fluid process, dismantling hierarchies and fostering inclusive, equitable spaces that reflect the complexity of lived experiences. Through appropriation, architecture can evolve beyond its role as a product of capitalism to become a medium for social and spatial liberation.

74 Boer, René, Marina Otero Verzier, Katía Truijen, and Johannes Schwartz. *Architecture of appropriation: On squatting as spatial practice*. Rotterdam: Het Nieuwe Instituut, 2019.

75 Ibid

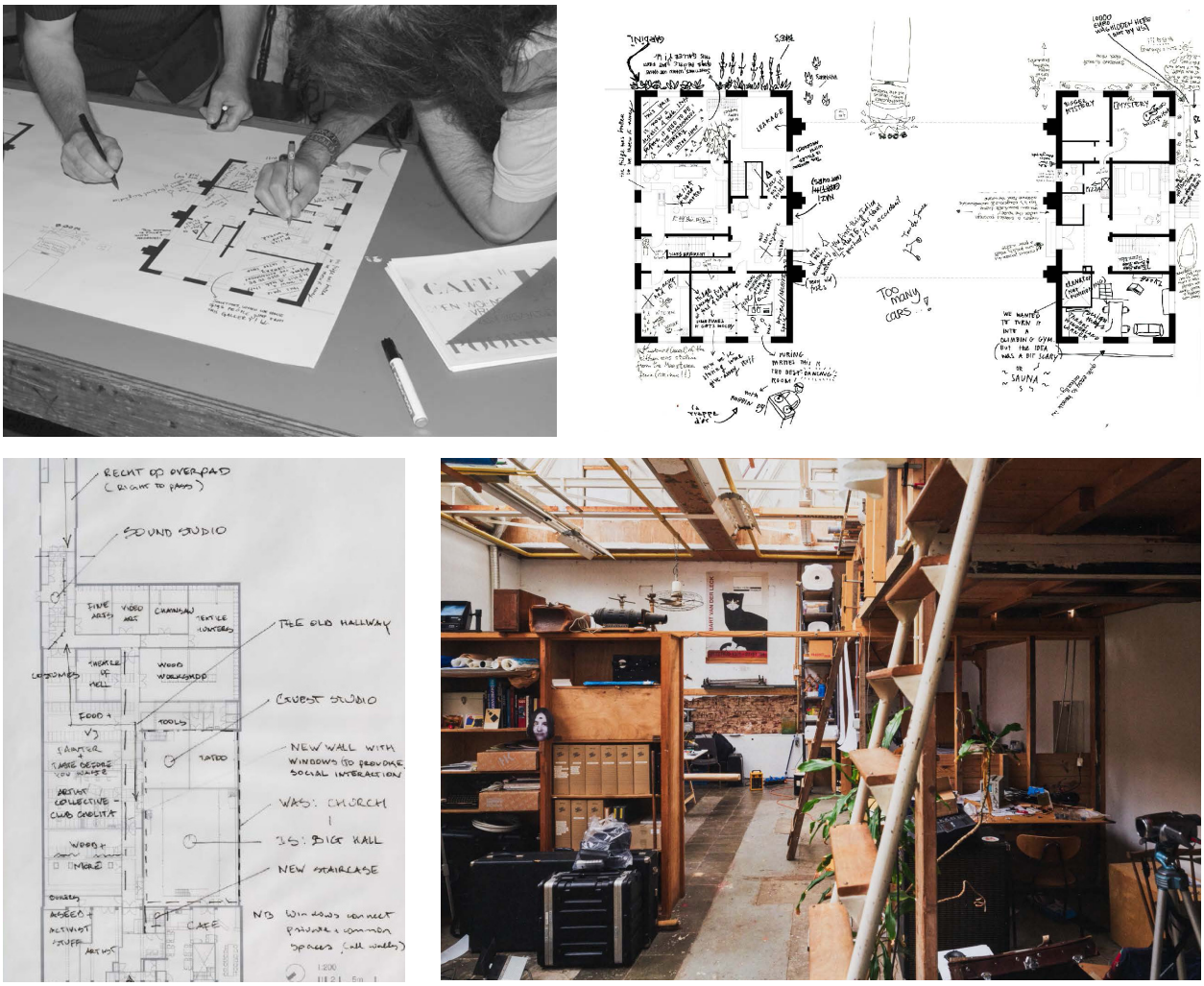
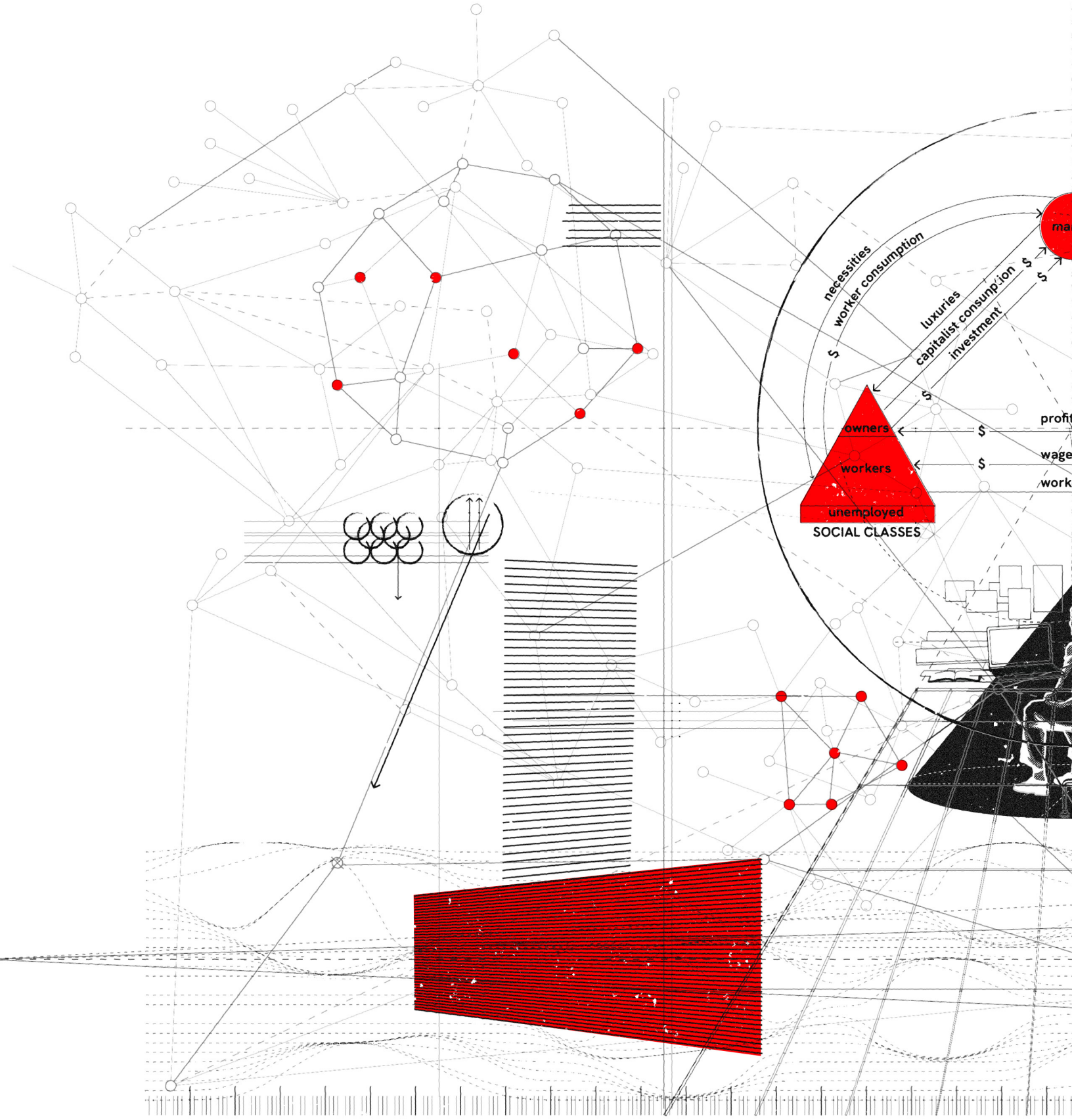


Figure 37: Images showing the annotation session of the architects with the local squatters (top left). Annotated plans consisting of reflections, stories and drawings of conditions within the space (top right). Annotated plans of another building consisting of similar remarks as the previous (bottom left). Photograph of the plans on the bottom left (bottom right).


necessities
worker consumption
luxuries
capitalist consumption
investment
$
owners
workers
unemployed
SOCIAL CLASSES
profit
wage
work



CHAPTER THREE

THE MENTAL

Introduction

The previous chapters established a foundation for understanding architecture beyond its commodified and prescriptive frameworks. The first chapter explored the social dimension, employing Actor-Network Theory (ANT) to examine the interconnected relationships between human and non-human actors. It argued for re-evaluating architecture as an active participant within networks, shaped by interactions and assemblages rather than predetermined hierarchies. The second chapter shifted focus to the physical dimension, drawing on Latour's dynamic approach to architecture to highlight how spaces evolve over time. It emphasized the need to move beyond static representations and embrace architecture's fluid and ever-changing nature, shaped by its materiality, context, climate, temporality and users. This chapter delves into the mental dimension, examining the roles of perception, tendencies of power, and generational influence in shaping architectural and spatial practices. While the social dimension views society as a network of symbiotic assemblages rather than rigid hierarchies, and the physical dimension recognizes non-human actors as dynamic, evolving entities, the mental dimension bridges these two by facilitating an understanding of the relationships between actors and their connections to the social and physical realms. By engaging with the theories of thinkers like Maurice Merleau-Ponty, Edmund Husserl, Michel Foucault, Gilles Deleuze and Félix Guattari, who are all prominent philosophers, historians and psychoanalysts, this chapter investigates how spatial materiality and design mediate power, influence identity, and reflect behaviours. It poses critical questions: How can we design spaces that accommodate unplanned interactions, evolving social conventions, and the fluidity of human behaviour? And how can architecture transcend its prescriptive origins to become a medium for societal evolution moving past capitalist hierarchies? Through this lens, the mental dimension emerges as a pivotal framework for understanding how spaces are conceived, controlled, and used.

Physicality and Space

The physical material environment is critical to human consciousness; it allows for a sensory experience that enables humans to interpret the world, often influencing our emotional and psychological states. Although people from North America spend 90% of their lives indoors, the impact of environmental conditions and architectural design on human health and well-being, especially physiological outcomes, remains largely unexplored.[76]

These spaces influence and shape cultural practices and social identities and embed our lives within a broader context. The construction of human consciousness and meaning is an interplay between humans and their material surroundings (see Fig. 38). The works of Maurice Merleau-Ponty and Edmund Husserl investigate the way the human body, as a physical entity, is in its own right productive of space as its bodily orientation and consciousness make sense and meaning of the surrounding material fabric of space.[77] Husserl argues for a return to the pre-scientific thought process beyond the scope of objectivity and the subtraction of meaning, but rather towards the lived experiences that build human consciousness and meaning.[78]

76 "Research." The Andrew Weil Center for Integrative Medicine. Accessed January 24, 2025. https://ipwp.arizona.edu/ipwp/research.html.

77 Husserl, Edmund, and David Carr. The crisis of European Sciences and Transcendental Phenomenology: An introduction to phenomenological philosophy. Evanston: Northwestern Univ. Press, 2006.

78 Ibid

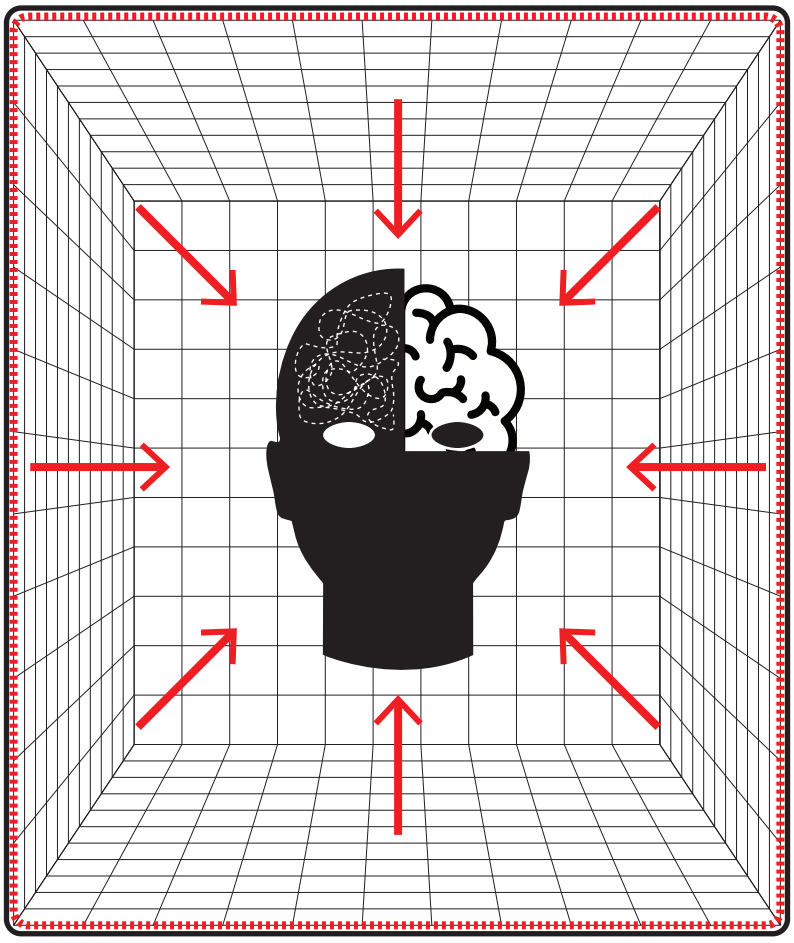


Figure 38: Diagram illustrating the correlation between human consciousness and the built world.

Similarly to Husserl, Merleau-Ponty rejects the objective interpretation of the world in place of a subjective experienced perspective.[79] He emphasizes that the body is not merely another object among other objects but a lived body or a "corps vécu" that can perceive and be perceived. The body's ability to be present physically in time allows for sensory engagement, which is fundamental to the composition of our consciousness and our sense of reality. In addition, he explores the notion of intentionality. This idea suggests that consciousness is always directed towards something, proposing that embodied experiences are constantly engaged with the world through pre-reflective dialogue.[80] With these two concepts, Husserl and Merleau-Ponty expand on the idea that the surrounding spaces highly influence a person, and they often make meaning of the contexts. From this perspective, an individual's perception of the spaces in which they reside can perpetuate an understanding of cultural and societal norms and capitalist hierarchies. With that in mind, Michel Foucault presents the idea that built spaces wield power, suggesting that architecture acts as an instrument to disseminate power structures, acting as mechanisms to establish social hierarchies.[81] For Foucault, built spaces materialize regimes of power, articulating the primary relations that dictate the people who reside in these spaces. According to him, these spaces do not directly mold or affect the individual's personal identity or consciousness but rather prescribe a relation that governs people.

This perspective is especially relevant for architectural spaces of education and practice, where the design of environments reinforces or challenges these structures. Universities and design studios, for example, should not be seen as neutral spaces but rather as spaces that are shaped by and, in turn, shape systems of authority, pedagogy, and professional hierarchy. The way these spaces are organized socially and physically can contribute to rigid production-driven atmospheres or perpetuate an open, participatory framework. This impacts how students and practitioners engage with knowledge, creativity, and interpersonal relationships. If architecture acts as a medium of power, rethinking how we design educational spaces can offer opportunities to disrupt hierarchical models and break the cycle of institutionalized capitalism present in the practice.

Relationships to Space

Between the concepts of Husserl, Merleau-Ponty, and Foucault, the dialogue between an individual and occupiable spaces introduces two main parameters between a person's relationship to space: how space or physicality can generate consciousness and how a space can define the societal framework of that individual. The work of Pierre Bourdieu, a French sociologist, expands on this, looking at the relationship between a person and social structure through "Habitus", which encompasses the reciprocal relationship between personal identity and the built environment, where spatial configurations reflect and shape social identities and relations (see Fig. 39).[82] Habitus represents the internalized schemas through which individuals perceive and engage with their world, including the built environment, which influences and

79-Merleau-Ponty, Maurice, and Donald A. Landes. *Phenomenology of perception*. London: Routledge, 2014.

80 Archer, John. "Social Theory of Space: Architecture and the Production of Self, Culture, and Society." Journal of the Society of Architectural Historians 64, no. 4 (December 1, 2005): 430–433. https://doi.org/10.2307/25068197.

81 Foucault, Michel. *Discipline and punish: The birth of the prison.* Translated by Alan Sheridan. New York: Random House US, 2012.

82-Bourdieu, Pierre. *Outline of a theory of Practice.* Translated by Richard Nice. Cambridge: Cambridge Univ. Press, 2010.

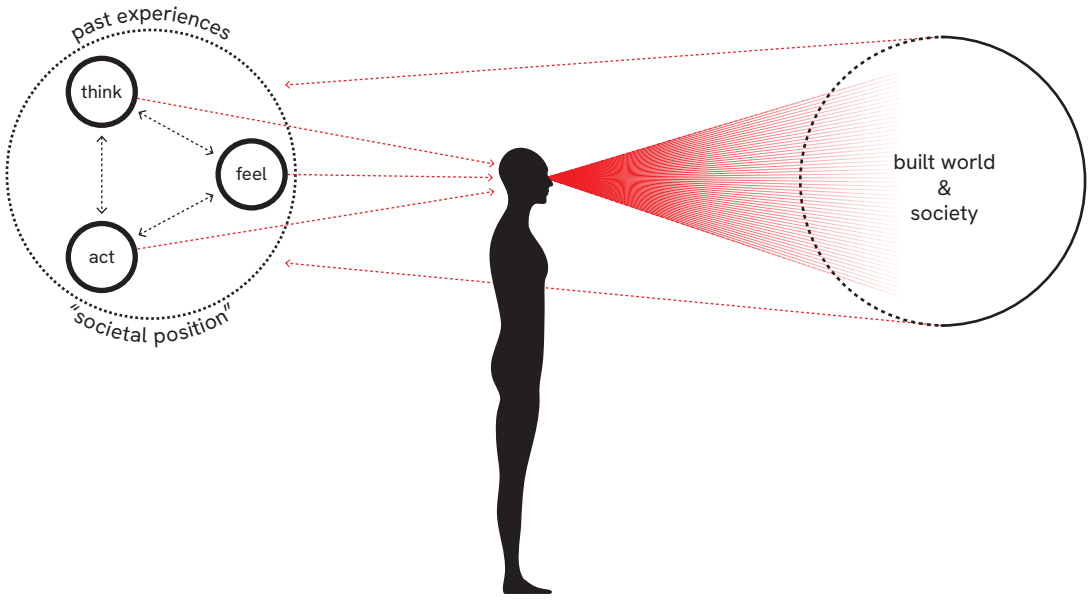


Figure 39: Diagram displaying the concept of Habitus, where past experiences or social position impacts the way individuals think, feel or act, towards society and the built world, while at the same time these vary things go back and inform experiences and social positions.

solidifies social identities.[83] In other words, Habitus is like an invisible guide that influences how we act, think, and interact subconsciously. It's not something we are born with but rather something we learn over time based on our social background, education, and experiences.

This dynamic interaction suggests that while built spaces and Habitus are interdependent, neither exerts complete dominance over the other, highlighting a complex interplay of influence and adaptation within social contexts.[84] This can be related to the concepts of Latour's Actor-network Theory and its flat ontology. From his perspective, the built world and the concept of Habitus run in parallel, offering a mutual relationship, with neither of them exhibiting absolute control over the other.

Although the spaces themselves cannot fully control Habitus, any individual's prescribed power of space, as per Foucault's concept, can influence a certain level of agency, structure, and, subsequently, a person's identity. Gille Deleuze and Felix Guattari provide a meta-apparatus to describe the understanding of space and the foundational extents of the evolution and purposes of society.[85] They represent space in two forms, the "smooth" and "striated," which often overlap and morph into the other (see Fig. 40).[86] The smooth spaces can be seen as nomadic, desert-like spaces undefined by bounds, whereas borders, property lines, and streets often define the striated spaces. Using these terms, Deleuze and Guattari expand on the extremes of both concepts, where the striations of space may provide order to society but constrict and deprive disadvantaged citizens or users. In contrast, although free, smooth spaces cannot manage civilized society. Although these terms are definitive in their descriptions, the flux of human nature and the properties of the smooth and striated spaces can blur and morph, where points of oscillation can form. Smooth spaces will ripple, bend, and striate, and striated spaces will iron out, flatten, and become smooth as time allows.

Temporality and Evolution of space

In summary of the points previously discusses, the individual's consciousness is correlated to the spaces in which they reside, occupy and inhabit. These spaces can often be used as a tool to convey and perpetuate some form of power. The relationship between the Habitus and the built world is dynamic and wholly influenced by one another, but never directly in control of each other. These spaces can be seen as smooth or striated and constantly shift, merge, and separate from one another, but this begs the question of why it does so.

One main factor that may influence this behaviour is the temporality of the human dynamic and its cyclic evolution. *The Fourth Turning* by William Strauss and Neil Howe presents a historical theory that mirrors this oscillation, framing societal change through generational cycles . The authors describe history as unfolding in 80-year cycles (saecula), each divided into four turnings, each lasting about 20-22 years, shaping societal moods and trends in a predictable rhythm (see Fig. 41):

- **The High** follows a crisis, marked by stability, optimism, and strong institutions.

83-Archer, Social Theory, 430-433.

84–Ibid.

85–Ibid.

86-Deleuze, Gilles, and Félix Guattari. *A thousand plateaus: Capitalism and schizophrenia*. Translated by Brian Massumi. London i pozostałe: Bloomsbury Academic, 2019.

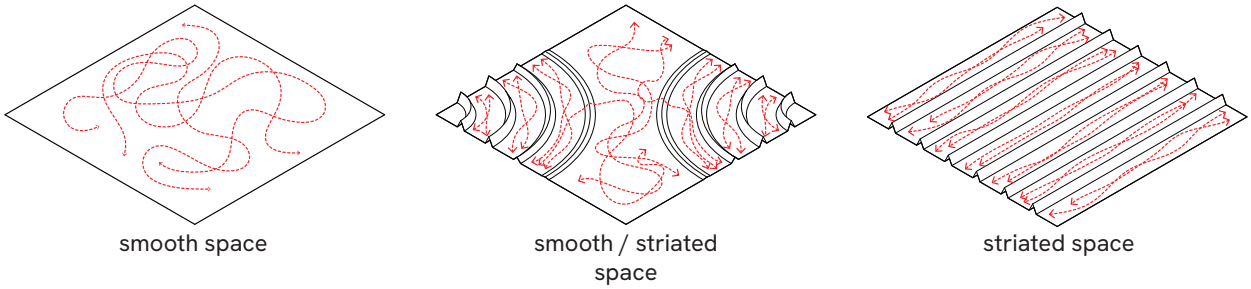


Figure 40: This is a diagram illustrating the navigation of smooth and striated spaces. The smooth is seen as open and free, while constraints and borders dictate the striated. Often, in the real world, these two types of spaces exist in tandem and merge into one another, allowing for some level of navigation between them.

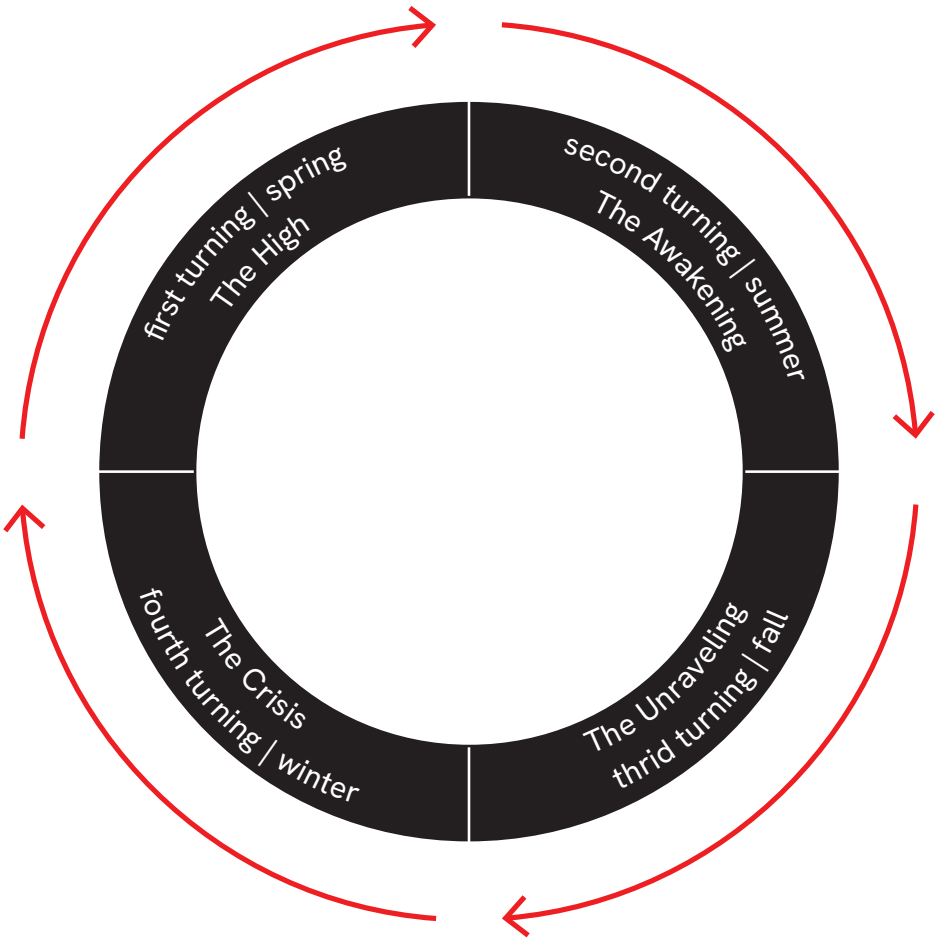


Figure 41: Diagram illustrating the cycle of each of the four turnings present in a saecula.

- **The Awakening** challenges established norms, as individualism and cultural movements rise.
- **The Unraveling** sees weakened institutions and growing social fragmentation.
- **The Crisis** is a period of upheaval, where conflicts or economic collapses redefine societal structures.

The "Crisis" represents a transformative era when institutions are challenged, societal values are redefined, and collective sacrifice emerges in response to upheavals such as wars or economic collapses.

Relating these concepts to space and the built fabric, we can begin to understand that when the governing power's architecture begins to limit its users' social needs, it starts to disrupt and challenge what is presented. Once used to guide and structure societal values, the initial striated spaces become apparatuses of the state that limit, control, and forcibly define society. The users begin to form their own smooth spaces, whether working with or against the striations, acting as both a means of regaining agency and critiquing the structure, creating a mix of the two spaces. An example of this process can be seen in the Favelas of Brazil's Rio de Janeiro, a form of informal housing most commonly seen as slums or shantytowns located on the edge of large urban cities but in extreme proximity to more affluent neighbourhoods.[87] In the early 19th to 20th century, the emergence of Favelas was driven by mass migration from rural areas toward cities, where industrialization created a concentration of jobs.[88] However, due to expensive and scarce housing as well as strict policies, many individuals were forced to find alternative ways of dwelling, resulting in the formation of Favelas.[89] During the 1960s to 1970s, an initiative to eradicate and remove Favelas took place but ultimately failed due to the government's inability to keep up with the population growth of these communities.[90] In the 1980s, as Brazil slowly moved away from military modes of governing, the proliferation of drug trafficking and illicit commercial businesses grew.[91] Ultimately, the rigid structure of the government was overtaken by criminal organizations that prioritized on the state's neglect and failure to accommodate the Favelas. These organizations then established parallel governance systems providing security and economic control, filling the power vacuum left by the state. The Favelas exemplify smooth spaces, where things are unconstrained by rules, while the governing bodies establish striated spaces in the adjacent cities, where things are controlled and structured (see Fig. 42). This dialectic between two modes of living, city and Favela, demonstrates the oscillation between smooth and striated.

It is important to note that the smooth and striated spaces are not objective structures but tendencies and ethical choices that organize how humans interact with the world. Henri Lefebvre emphasizes that space production's political and ideological aspects are a crucial site of social struggle and power relations, where different groups compete to impose their vision of space and use it to their advantage.[92]

87 Wallenfeldt, Jeff. "favela." Encyclopedia Britannica, January 4, 2025. https://www.britannica.com/topic/favela.

88 O'Hare, Greg, and Michael Barke. "The Favelas of Rio de Janeiro: A Temporal and Spatial Analysis." *GeoJournal* 56, no. 3 (2002): 225–40. https://doi.org/10.1023/a:1025134625932.

89 Ibid

90 "Brazil: Five Centuries of Change." Brazil Five Centuries of Change. Accessed January 26, 2025. https://library.brown.edu/create/fivecenturiesofchange/chapters/chapter-9/favelas-in-rio-de-janeiro-past-and-present/.

91 Ibid

92 Lefebvre, Henri. *The production of space*. Translated by Donald Nicholson-Smith. Oxford, OX, UK: Blackwell, 2017.



Figure 42: Photograph taken by the photojournalist Tuca Vieira of the Paraisópolis favela and a penthouse tower in Morumbí . It showcases the disparity between the two forms of living and illustrates the two conditions of smooth and striated using the diagram above the image. The Favelas can be seen as smooth spaces as the laws and governing bodies are almost non-existent. In contrast, the adjacent apartment complex still maintains a level of structure under the regulatory conditions.

Through this diversity of spatial governance or lack thereof, there is a constant dialogue between contrasting ideals that both parties impose: those with the power to enact change and those who respond to it. Regardless of the ideals, the opposing ideologies eventually settle and perpetuate a new way of life that responds to social, economic, and cultural differences in relative peace without conflict per the theories of the Fourth Turning. Regardless of these changes, the smooth and striated spaces still co-exist, but in varying capacities which form an asymmetry, where certain striated spaces allow for smooth spaces but still control the overarching governance, or vice versa, where the striated spaces protect those within from the feral nature of the outside world.[93]

Application: Tactical and Strategic Architecture

Understanding smooth and striated spaces requires recognizing their duality and interwoven natures where neither is seen as inherently superior, with both shaping human interactions and spatial experiences. In developing this spectrum, a series of spatial tendencies can be arranged from smoothest to most striated: appropriation, freedom, agency, structure, policy, and oppression (see Fig. 43). These tendencies can be associated with the turnings previously mentioned, which reflect evolving tensions between individual autonomy and institutional control (see Fig. 44). Each stage defines how space is used, influenced, and contested. The spectrum's paradox lies in the extreme ends, where those in power can appropriate at will, just as oppression limits freedoms. This framework contextualizes architecture as both a product and a catalyst of social change. For example, post-WWII suburban expansion reflected desires for security but resulted in countercultures that resisted institutionalized norms.[94] Thus, architecture and space exist with constant push and pull, where norms are established and opposed. Within these oscillations, grey areas appear as moments of opportunity for those in the margins.

Michel de Certeau, a French scholar, historian, philosopher, and psychoanalyst, examines how individuals navigate these grey areas within structures and systems they cannot fully control. De Certeau introduces two key concepts: "strategies" and "tactics." These concepts distinguish between different methods of understanding and engaging with the world, providing a framework for analyzing the power dynamics that shape spaces and how individuals respond to them.[95]

According to de Certeau, strategies are the methods used by those in positions of power to control, organize, and structure spaces. They are deliberate, institutionalized, and public, they encompass policies, urban planning, business strategies, and pedagogical practices that reinforce existing power dynamics and hierarchies related to and engaging with the world.[96] Strategies provide a framework for analyzing the power dynamics that shape spaces and how individuals respond to them. This can be related to the capitalist dynamic.

In contrast, tactics are the everyday methods individuals employ to adapt, resist, and

93 Somers-Hall, Henry, Jeffrey A. Bell, and James Williams. *A thousand plateaus and philosophy*. Edinburgh: Edinburgh University Press, 2018.

94 Wallenfeldt, J.. "Silent Generation." Encyclopedia Britannica, October 9, 2024. https://www.britannica.com/topic/Silent-Generation.

95 Certeau, Michel de. *The practice of everyday life. vol. 1, the practice of Everyday Life*. Berkeley: University of California Press, 1984.

96 Ibid

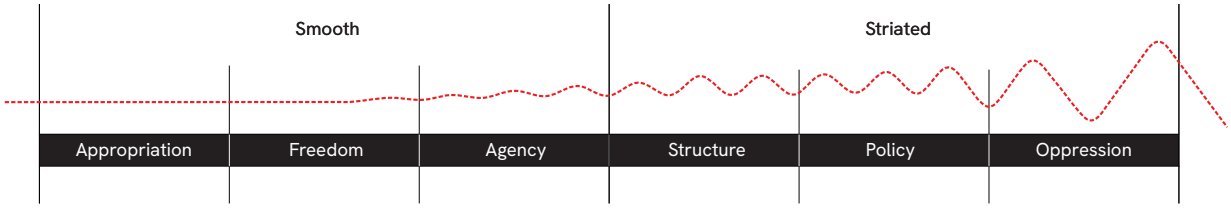


Figure 43: The first iteration of mapping the spatial tendencies of appropriation, freedom, agency, structure, policy and oppression in relationship to the smooth and striated.

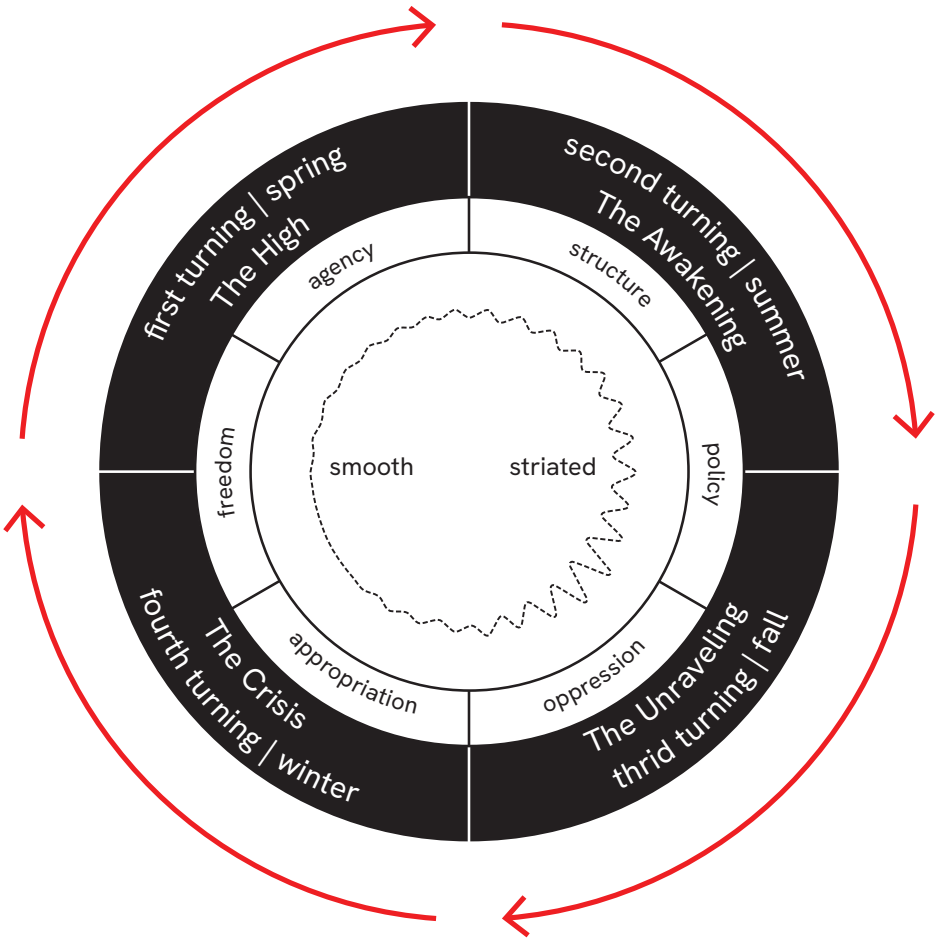


Figure 44: Expanded diagram mapping the spatial tendencies in conjunction with the cyclic nature of the four turnings and the smooth and striated spaces.

repurpose spaces constrained by strategies. These actions are subtle, flexible, and often unseen, relying on creativity and improvisation (see Fig. 45).[97] Tactics do not aim to create or control space but instead navigate and manipulate existing spaces to reclaim agency. They exploit gaps, overlooked opportunities, and cracks in systems, allowing individuals to regain a sense of autonomy and take advantage of operating within the grey areas of institutional neglect. Through this action, a community can foster a sense of resilience and benefit from the creation of tangible systems of support. Not only can this inspire broader institutional change, but it also shapes how individuals perceive their agency within built environments, reinforcing the idea that spatial interventions, regardless of scale, can empower others to reimagine and take ownership of their own spaces.

Contemporary approaches to tactics involve the use of Tactical Urbanism or Guerrilla Urbanism as modes to challenge or disrupt restrictive institutional practices. Despite existing regulations, communities, groups, and individuals engage in low-cost, temporary interventions to enhance their environments, such as planting greenery, creating gathering spaces, or improving roadway markings.[98] These efforts provide immediate improvements and pressure governing bodies to enact more permanent changes.

Ron Finley, a fashion designer turned activist, demonstrates the application of Tactical Urbanism by using "Guerilla Gardening," a term used to describe the process of individuals growing and planting flowers, fruits, or vegetables on vacant or underused plots of land without legal permission.[99] Finley, who is from South Central Los Angeles in the United States, lives in a food desert. A food desert is an area where residents lack sufficient access to healthy or fresh foods, typically due to socioeconomic factors.[100] During the COVID-19 pandemic, access to fresh produce became difficult due to scarcity and accessibility, which drove Finley to plant his own garden on a plot of land between his house and the street (see Fig. 46). At the time, this was considered illegal in the city of Los Angeles, and he received a citation and was asked to remove the garden.[101] He then decided to start a petition, which led to a change of law and an amendment to the area's residential guidelines.[102] He continues to lead an initiative called the "Ron Finley Project," which aims to transform communities and teach them to plant and grow their own food (see Fig. 47).[103] This example showcases the simplicity and effectiveness of Tactical Urbanism in making tangible yet proactive changes in existing conditions that limit and control usage.

Although Tactical Urbanism is commonly used by citizens, grassroots movements, and activists to critique governing bodies' policies, the government itself can also apply these methods to bypass its bureaucracy and back citizens through government-funded pilot projects. Again, during the COVID-19 pandemic, the capital of Colombia, Bogotá, began to implement pop-up bikeways as a Tactical Urbanist approach to reduce reliance on public transportation due to potential contagion risks (see Fig. 48). Within a few days, 84 km of temporary bikeways were established, adapting existing routes and roads to suit cyclists' usage patterns and traffic.

97 Certeau, Michel de. *The practice of everyday life. vol. 1, the practice of Everyday Life*. Berkeley: University of California Press, 1984.

98 "Tactical Urbanism." Tactical Urbanist's Guide. Accessed December 21, 2024. https://tacticalurbanismguide.com/about/.

99 Albala, Ken. *The sage encyclopedia of food issues. 1-*. Vol. 1. 3 vols. Los Angeles: SAGE Reference, 2015.

100 Rogers, Kara. "food desert." Encyclopedia Britannica, September 11, 2024. https://www.britannica.com/topic/food-desert.

101 Weston, Phoebe. "'This Is No Damn Hobby': The 'gangsta Gardener' Transforming Los Angeles." The Guardian, April 28, 2020. https://www.theguardian.com/environment/2020/apr/28/ron-finley-gangsta-gardener-transforming-los-angeles.

102 May, Kate Torgovnick. "No More Citations for Curbside Veggies in Los Angeles." TED Blog. Accessed January 31, 2025. https://blog.ted.com/no-more-citations-for-curbside-veggies-in-los-angeles/.

103 "About the Ron Finley Project." Ron Finley Project. Accessed January 31, 2025. https://www.ronfinley.com/about.

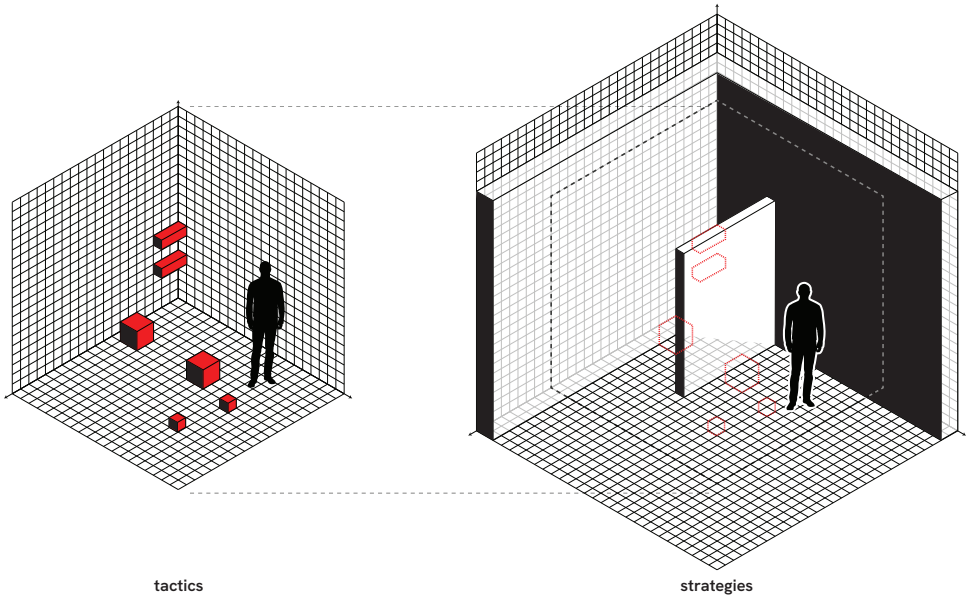


Figure 45: Diagram illustrating the difference between tactical and strategic architecture.



Figure 46: Photograph of Ron Finley in front of a "sidewalk garden".



Figure 47: Photograph of Finley's backyard pool converted into a garden.

The initiative saw an increase in cycling rates from 6.6% in 2019 to around 10% in 2020 and increased usage in low-income workers and women. As the concerns of the pandemic faded, backlash from motorists, businesses and transit operators increased, as well as bike theft, accidents and harassment of female cyclists. By 2022, 28km of these bikeways were made permanent. However, critics do not consider Bogotá's efforts as Tactical Urbanism due to its top-down approach that neglected to include input from citizens. Despite these concerns, the city's experiment saw a shift in its long-term mobility strategies, providing an example of how temporary intervention can inform permanent urban infostructure changes (see Fig. 49).[104]

Although Tactical Urbanism positively impacted these two examples, it and other previously discussed architectural theories are susceptible to capitalist exploitation. Lina Naoroz Bråten, an assistant professor at the Norwegian University of Science and Technology, examines in her paper, *Temporary temporariness? The (mis)use of tactical urbanism from the 'open city' framework,* how Tactical Urbanism aligns with principles of the "open city" framework and how it is often misused towards the concept of a "closed city." An "open city" represents long-term temporariness; in other words, it is incomplete, flexible, diverse, inclusive and open to change and adaptability. A "closed city" represents, in her terms, "temporary temporariness," which uses tactical urbanism as a branding strategy for large-scale urban developments. It is mainly used as an eye-catching intervention for publicity and marketing aimed at attracting investors and privileged user groups while also increasing the risk of gentrification. Bråten argues that there has been increased usage of tactical urbanism from municipalities and developers who have co-opted it as a tool to support neoliberal and capitalist urban developers. Furthermore, this top-down approach reinforces exclusionary urban practices, prioritizing commercial interests over social inclusivity. She warns that the misuse of tactical urbanism contributes to the privatization of public space, superficial community involvement, and displaces marginalized groups, reframing urban interventions as spectacles over a catalyst for meaningful change. She calls for a shift towards participatory planning, resisting gentrification and a new way of designing public spaces open to spontaneity, flexibility and genuine inclusivity over commercial spectacles. [105]

The exploitation of Tactical Urbanism can be attributed to its informal nature, which often functions outside bureaucratic processes. Its lack of formal protection and absence of legal structures allows it to be co-opted and repurposed by bodies of power. However, identifying its potential use and misuse broadens the scope of discussion over its application. In doing so, the various components that can lead it toward exploitation, like the top-down approach, can be avoided to maintain its integrity as a grassroots movement. The previous examples provide insight into the capabilities of this method and exemplify many of the alternative theories identified in this thesis. If used correctly, it has the potential to engage in broader discourse surrounding spatial issues. De Certeau's insights resonate with these experiments, as he notes the importance of:

104 Lucas, Maëlle, Vincent Gouëset, and Florent Demoraes. "Cycling in Bogotá during a Pandemic. the Influence of Tactical Urbanism and Perceived Insecurity on Bicycle Usage." *The Urban Book Series*, November 17, 2023, 197–219. https://doi.org/10.1007/978-3-031-45308-3_9.

105 Bråten, Lina Naoroz. "Temporary Temporariness? The (Mis)Use of Tactical Urbanism from the 'Open City' Framework." *Urban Studies*, August 22, 2024. https://doi.org/10.1177/00420980241263436.



Figure 48: Photograph of a "pop-up" bikeway on Carrera 68.



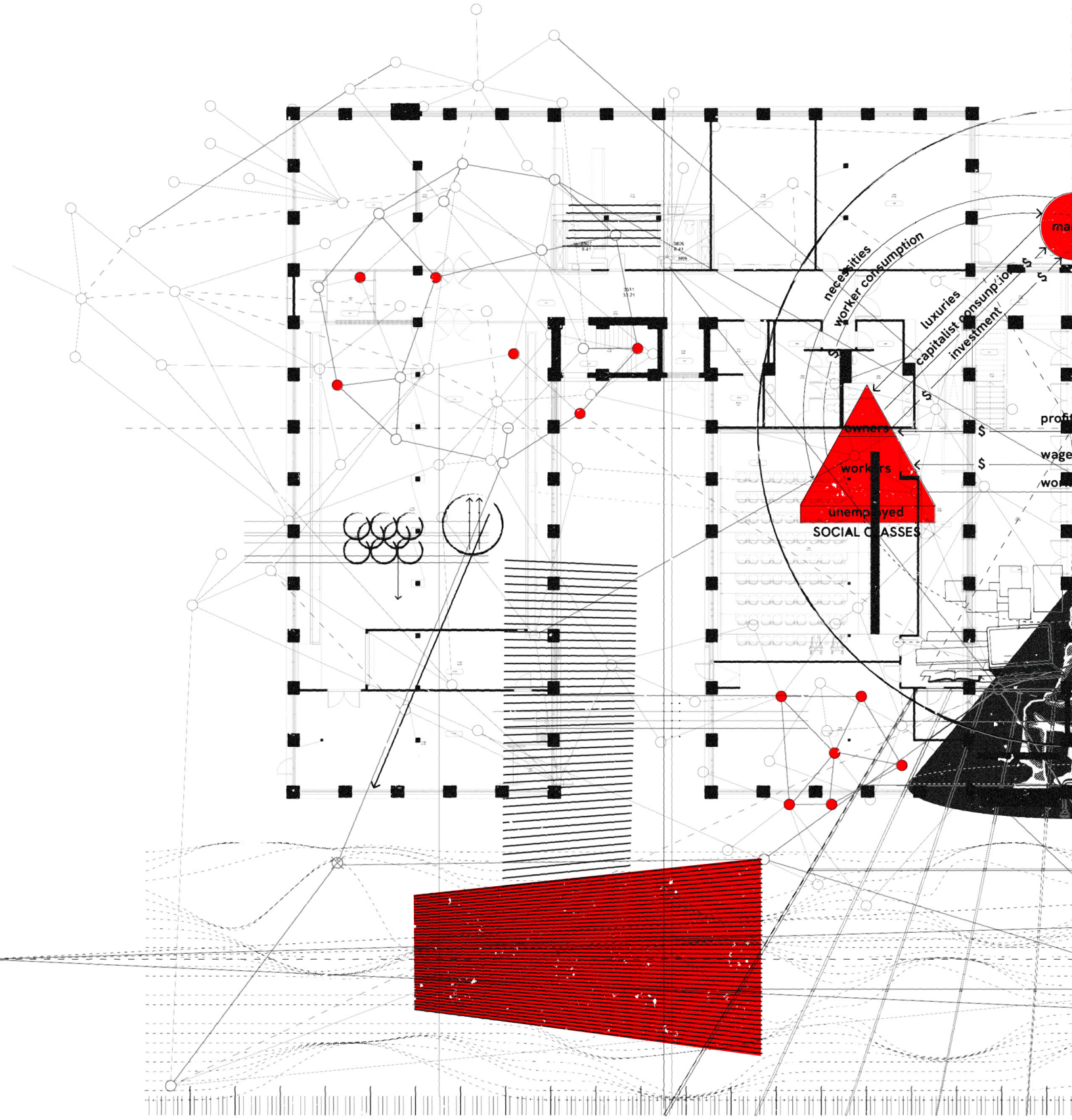
Figure 49: Photograph of an informal "pop-up" bike repair station beside an informal bikeway.

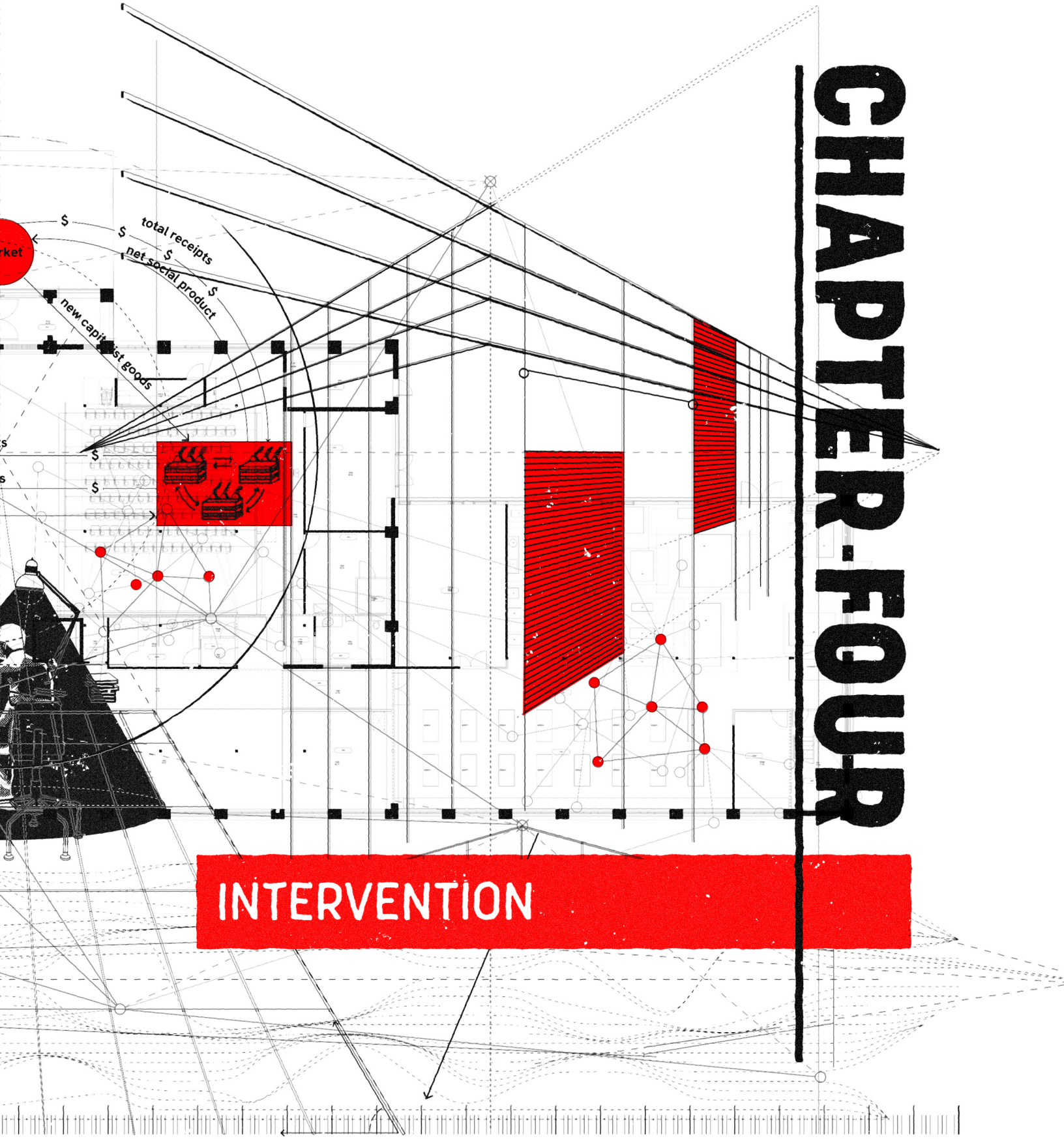
> "mak[ing] use of the cracks that particular conjunctions open in the surveillance of the proprietary powers"[106] and the necessity to "constantly manipulate events in order to turn them into opportunities... achieved in the propitious moments when they are able to combine heterogeneous elements".[107]

These perspectives underscore the potential of tactical approaches to reclaim agency and subvert oppressive structures such as capitalism. Following De Certeau's ideas, to combat imposing strategic methodologies, working within the cracks and grey areas can impart more significant change. These, as shown with the efforts of Ron Finley and Bogotá, act as temporary relief to existing issues and serve as a basis for spreading knowledge and engaging autonomy and agency within its users. In applying the aspects of architectural appropriation and Tactical Urbanism, the following will consist of the application of design stemming from the alternative theories that were discussed earlier in this thesis. They will showcase the practical application of understanding networks, buildings in motion, spatial tendencies and how they can manifest into a tactical strategy that not only works against capitalist frameworks but serves as a catalyst for future designers.

106 Certeau, The practice of, 1984

107 Ibid


necessities
worker consumption
luxuries
capitalist consumption
investment
$
owners
workers
unemployed
SOCIAL CLASSES
profit
wage



CHAPTER FOUR

INTERVENTION

Summary of Theory

In summarizing the previous chapters, the Actor-Network Theory (ANT), developed by Bruno Latour and his colleagues, offers a framework for understanding the social, emphasizing the interconnected networks of human and non-human actors within the architectural process. By challenging hierarchical systems, ANT highlights the dynamic interactions that shape social realities. Through this lens, architecture emerges as a network of assemblages, an evolving entity where various actors continuously influence and reshape space.[108] This dimension represents the social.

Building on ANT, architecture's inherent dynamism becomes evident. Latour and Yaneva describe buildings as living, transforming and evolving entities that change over time.[109] Similarly, Lefebvre's framework of perceived, conceived, and lived space reinforces this perspective, illustrating how capitalist systems prioritize static, abstract, and mental spaces over architecture's physical and social dimensions. Within this critique, the concept of architectural appropriation emerges as a counterstrategy, enabling users to reclaim and transform spaces in ways that resist commodification and foster organic, user-driven evolution. This dimension represents the physical.

Extending the discussion beyond the social and physical, the mental dimension connects to the ideas of thinkers such as Husserl, Merleau-Ponty, Foucault, Deleuze, and Guattari, who explore spatial and personal perception alongside the tension between freedom and control in spatial design. Concepts like smooth and striated spaces reveal how architecture mediates between agency and constraint, while the theories of the *Fourth Turning* emphasize generational shifts and their impact on spatial tendencies.[110,111] Within this framework, *Tactical Urbanism* emerges as a means of navigating and subverting systems of control, favouring a grassroots, bottom-up approach.

The following chart summarizes these key findings (see Fig. 50).

108 Latour, Bruno. *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press, 2023.

109 Latour, B., & Yaneva, A. (2008). Give Me a Gun and I Will Make All Buildings Move: An ANT's View of Architecture. In G. Reto (Ed.), *Explorations in Architecture: Teaching, Design, Research* (pp. 80-89). Basel: Birkhäuser.

110 Deleuze, Gilles, and Félix Guattari. A thousand plateaus: Capitalism and schizophrenia. Translated by Brian Massumi. London i pozostałe: Bloomsbury Academic, 2019.

111 Strauss, William, and Neil Howe. *The fourth turning: An American prophecy*. New York: Broadway Books, 1998.

Architectural Theories	Capitalist Tendencies	Alternative Modes of Thought	Architectural Tools
The Social	▪ Hierarchy & Fixed Structures ▪ Human-Centered Thinking ▪ Top-Down Control of Design ▪ Social Determinism ▪ Architecture as a Passive Object	▪ Flat Ontology (Actor-Network Theory, ANT) ▪ Architecture as a Networked Entity ▪ Participatory & Bottom up Approaches to Design ▪ Non-Human Actors as Active Participants ▪ Reframing Space Beyond Economic Value	**ANT**
The Physical	▪ Static Representations of Architecture ▪ Abstract & Idealized Spaces ▪ Disregard for Temporal Evolution ▪ Reduction of Architecture to Functionality ▪ Prioritization of Mental Space Over Lived and Perceived Space	▪ Dynamic & Responsive Architecture ▪ Multidimensional Representations of Space ▪ Recognizing Lived Space ▪ Temporality & Adaptation in Architecture ▪ Blurring of Spatial Boundaries ▪ Architecture as an Ongoing Process ▪ Integrating the Role of Non-Human Actors	**Architectural Appropriation**
The Mental	▪ Spatial Power & Control ▪ Oppressive Urban Planning & Policy ▪ Generational Control Over Space ▪ Architecture as an Instrument of Authority ▪ Rigid Definitions of Space ▪ Marginalization & Exclusion	▪ Cyclical Understanding of History & Society ▪ Reclaiming Agency Over Space ▪ Architecture as a Medium for Social Change ▪ Temporality & Generational Influence in Design ▪ Negotiation Between Smooth & Striated Spaces ▪ Space as a Site of Negotiation ▪ Dissolution of Prescribed Spatial Boundaries	**Tactical Urbanism**

Figure 50: Chart summarizing the key points discussed in the theory.

From Theory to Application

The dissemination of the key architectural realms of the social, physical, and mental has identified the various ways in which institutionalized capitalism has embedded itself into architectural education and practice. It has revealed how the inherent structures and approaches to architecture can perpetuate exploitative systems through hierarchical social structures, focus on production, and spatial tendencies of control. However, the alternative modes of architectural thought, such as Actor-Network Theory, Architectural Appropriation, and Tactical Urbanism, serve as methods and precedents to re-imagine ways of working within and around institutionalized systems.

Using the University of Waterloo School of Architecture as a case study, this research applies the foundational theories discussed in previous chapters to navigate and engage with the margins of institutional frameworks within and around the school. Actor-Network Theory will serve as a method for contextualizing existing networks and interactions that shape the school's internal and external relationships. Through this approach, the study examines the dynamic interactions that contribute to the school's continuous evolution, identifying the various factors that keep the building in a constant state of flux, as opposed to viewing it as a static entity. To further explore the nuances of space and its occupation, an analysis of spatial use and control will provide deeper insight into who engages with these environments, how they navigate them, and the mechanisms that regulate access and agency.

Using this analysis, a series of explorations will be conducted to re-conceptualize space within the school. They will showcase the possibility of designing as actors within both the margins and the institutional system. By demonstrating the transformative potential of understanding and working within the margins, these explorations can inform students to move beyond producing or perpetuating capitalist values. Instead, they can see themselves as active mediators, translators, and participants who can better navigate and make sense of the margins they inhabit and create.

The following speculative interventions will serve as a means of showcasing the transformative potential of small-scale modifications of space, as they can inform a broader network of influences, incentivize spatial evolution, and reclaim agency over design. These explorations aim to broaden the architectural educational experience, reframing the architect's journey from an agent of production to a representative of agency, adaptability, and critical engagement with the built environment. Rather than reinforcing predetermined roles within capitalist systems, this approach encourages students to see themselves as designers with the power to challenge, disrupt, and reimagine spatial relationships (see Fig.51). By prioritizing processes over products, dialogue over dogma, and experimentation over efficiency, these interventions cultivate an architectural education that fosters resilience, inclusivity, and social responsibility. Ultimately, this study underscores the importance of reclaiming architectural practice as a site of resistance, where students are equipped with technical skills and the critical consciousness to navigate and reshape the socio-spatial conditions that define their work and their world.

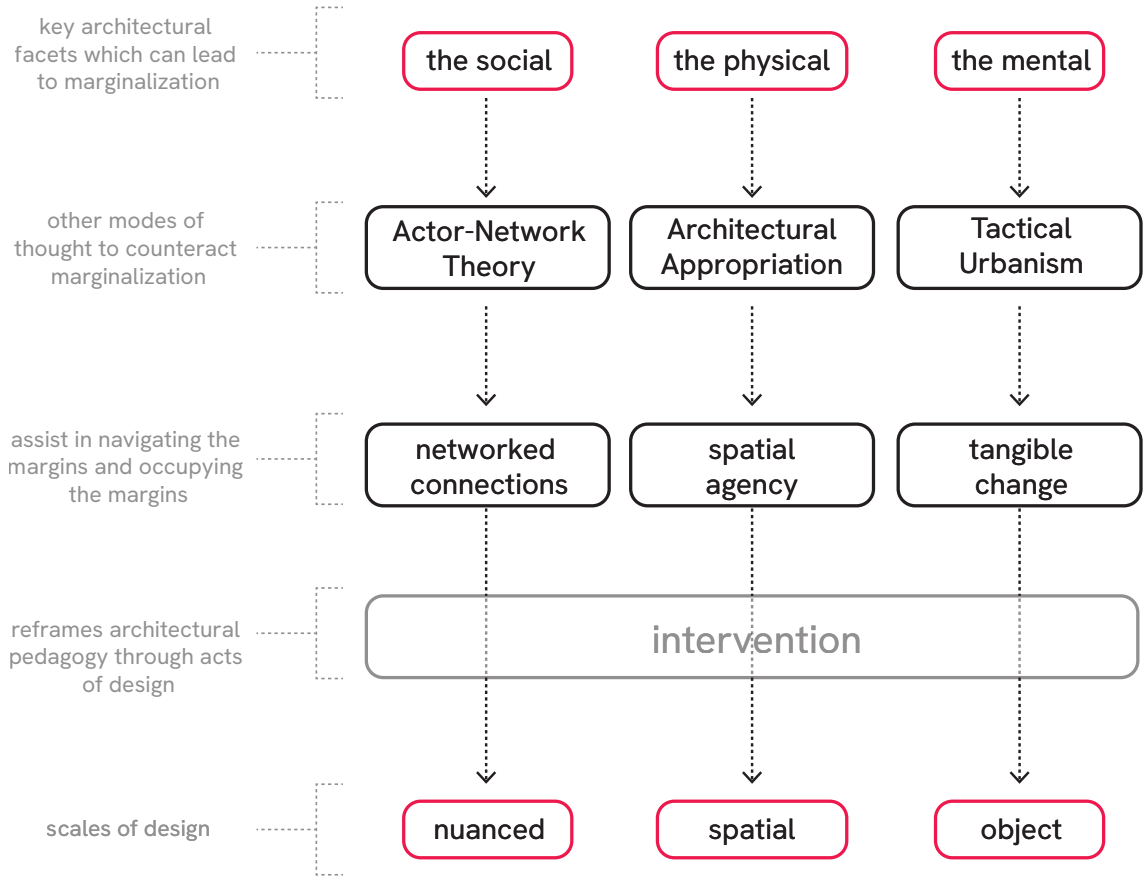


Figure 51: Diagram illustrating the process of transitioning from theory to design. Beginning with key architectural facets, alternative modes of thought emerge, revealing methods for navigating the margins. Interventions, varying in scale according to their capacity to facilitate this navigation, serve as tools for empowerment, transformation, and change. Through this process, the role of the architect is reoriented, shifting beyond conventional frameworks toward a more dynamic and responsive practice.

In Documenting Spatial Networks

The University of Waterloo School of Architecture offers a unique position as a satellite campus on the periphery of its main campus in Kitchener, Waterloo. The School of Architecture, situated in Cambridge, Ontario, approximately 25 km from the main campus, operates with limited access to the physical amenity spaces at the university's primary location. Originally, the School of Architecture was located within the immediate radius of the main campus, albeit on the very edge. Following various re-locations within the area, it was determined by the faculty and administration that a substantial move was required to support the growing program. After an extensive search, which included many hurdles and negotiations, a final site was chosen to house the program. Formerly a silk mill, the location of 7 Melville St South was acquired, and following the process of adaptive reuse, design, and construction, the building opened its doors in 2004 (see Appendix). Currently, the School of Architecture sits on the edge of the Grand River, adjacent to the Main Street bridge which connects the school to the downtown core of Cambridge, formerly known as Galt (see Fig.53).

Due to the distance associated with being a satellite campus, the move involved rethinking access to supporting amenities, campus infrastructure, and campus life (see Fig.52). The move catalyzed the development of new and distinct support systems for the school, fostering a unique network of spaces and relationships within its community to support its participants. This symbiotic relationship has benefited both the school and the surrounding downtown community by providing a home for the architecture program while contributing to local economic development.

As a result of this exchange, student-led initiatives have played a crucial role in creating dynamic assemblages of space in the neighbourhood. These connections, primarily consisting of vacant commercial buildings, individual student houses, and public spaces, have been appropriated and transformed into transient buildings to house various events and programs. In doing so, these temporary spaces have acted as an extension of the school, giving it social and physical prominence in the city's built environment.

However, this network has experienced a significant gap following the COVID-19 pandemic. There can be several influencing factors, ranging from the immediate response to the pandemic and risks of exposure to its overall shift in economic and social values, changing how generations of people think and act. The brief move to online learning and the rapid turnover of students, staff and faculty resulted in a substantial decrease in the transmission of knowledge. Furthermore, the pandemic's strain on existing systems and institutions shifted focus away from community-oriented initiatives, redirecting efforts toward enduring a global health crisis and adjusting systems to accommodate safety concerns. As a result, challenges in preserving the legacy of student-community efforts and transient spaces have diminished the frequency and number of networked spaces. Additionally, a shift in municipal values has seen the prioritization of commercialization, reducing the number of vacant commercial spaces. As

a result of all these factors, the collective understanding of how these spaces contributed to identity, support systems, and meaningful community engagement eroded.

With compromised mechanisms of knowledge transfer and continuity, the inherently temporary nature of student life, due to the co-op program, exacerbates this loss. The alternating study and work terms lead each incoming cohort to navigate the margins with less inherited wisdom than past generations.

Consequently, following the pandemic, the architectural potential of understanding this network remains underutilized, and the social fabric that once sustained a culture of community-driven accommodation continues to disappear. Addressing this gap requires intentional efforts to re-establish shared knowledge networks, ensuring that the legacy of culture is both preserved and adapted for contemporary needs.

The following diagrams serve as an initial step in archiving and documenting past student networks, both physically and socially. They provide a means of understanding the spatial usage of the past and act as a potential tool for guiding both the school and the broader community in navigating the margins (see Fig. 54). However, as previously noted, there is little to no open documentation detailing their precise functions and locations. The information presented in the following diagram is a compilation of accessible archived posters combined with the collective memory of students and faculty, representing only a fraction of what once existed. A timeline has been created to illustrate the frequency of space occupation, revealing a significant decline in community space usage following the pandemic (see Fig. 55).



Figure 52: Diagram comparing the University of Waterloo's main campus (left) and the School of Architecture campus (right). This visual comparison highlights the stark difference in scale between the two campuses. While it is understandable that the main campus occupies a larger footprint, as it accommodates the majority of the university's programs, this also means greater access to amenities and built-in support systems. In contrast, the School of Architecture, as a satellite campus, inherently has a smaller footprint, resulting in fewer resources and institutional support.

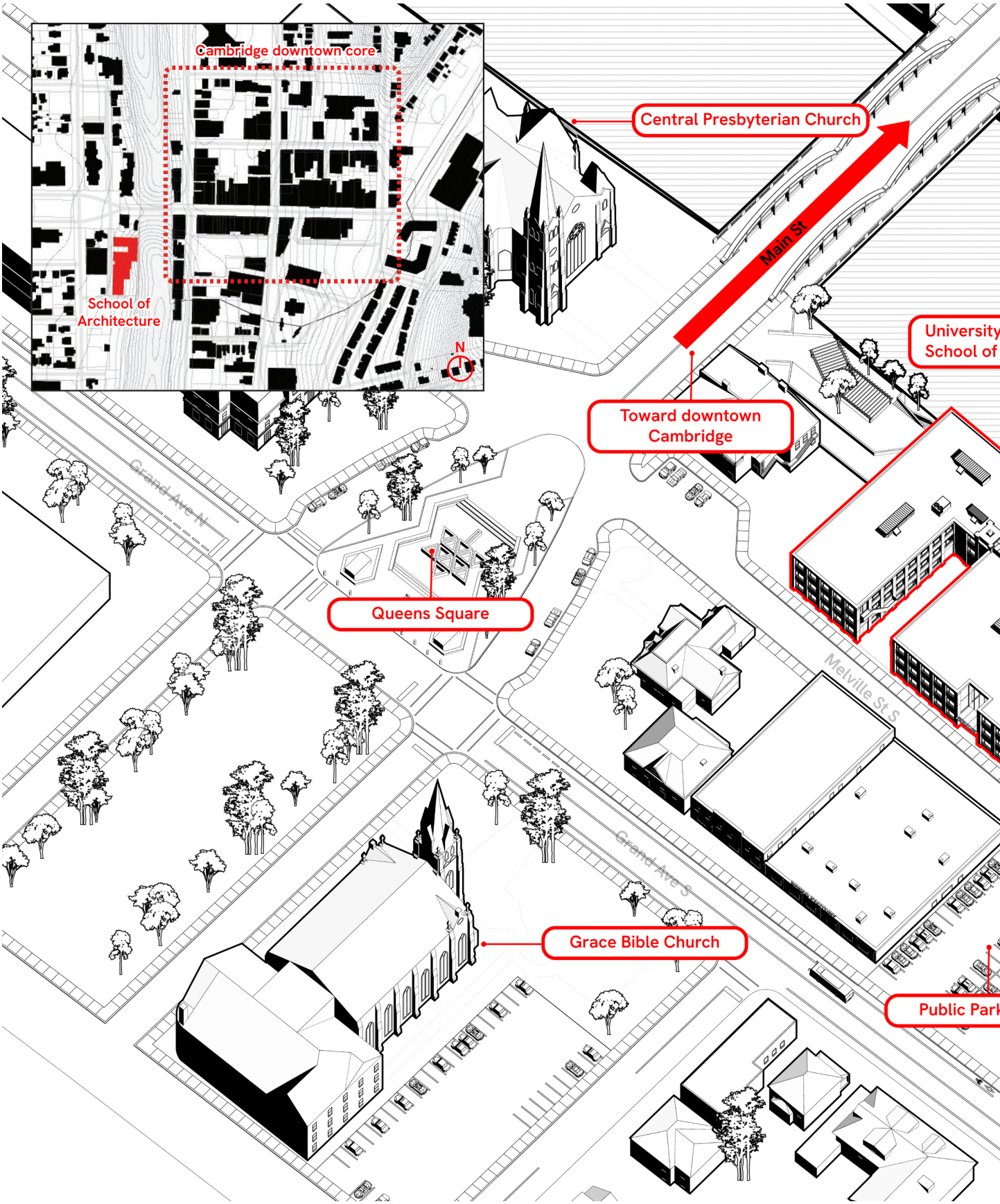
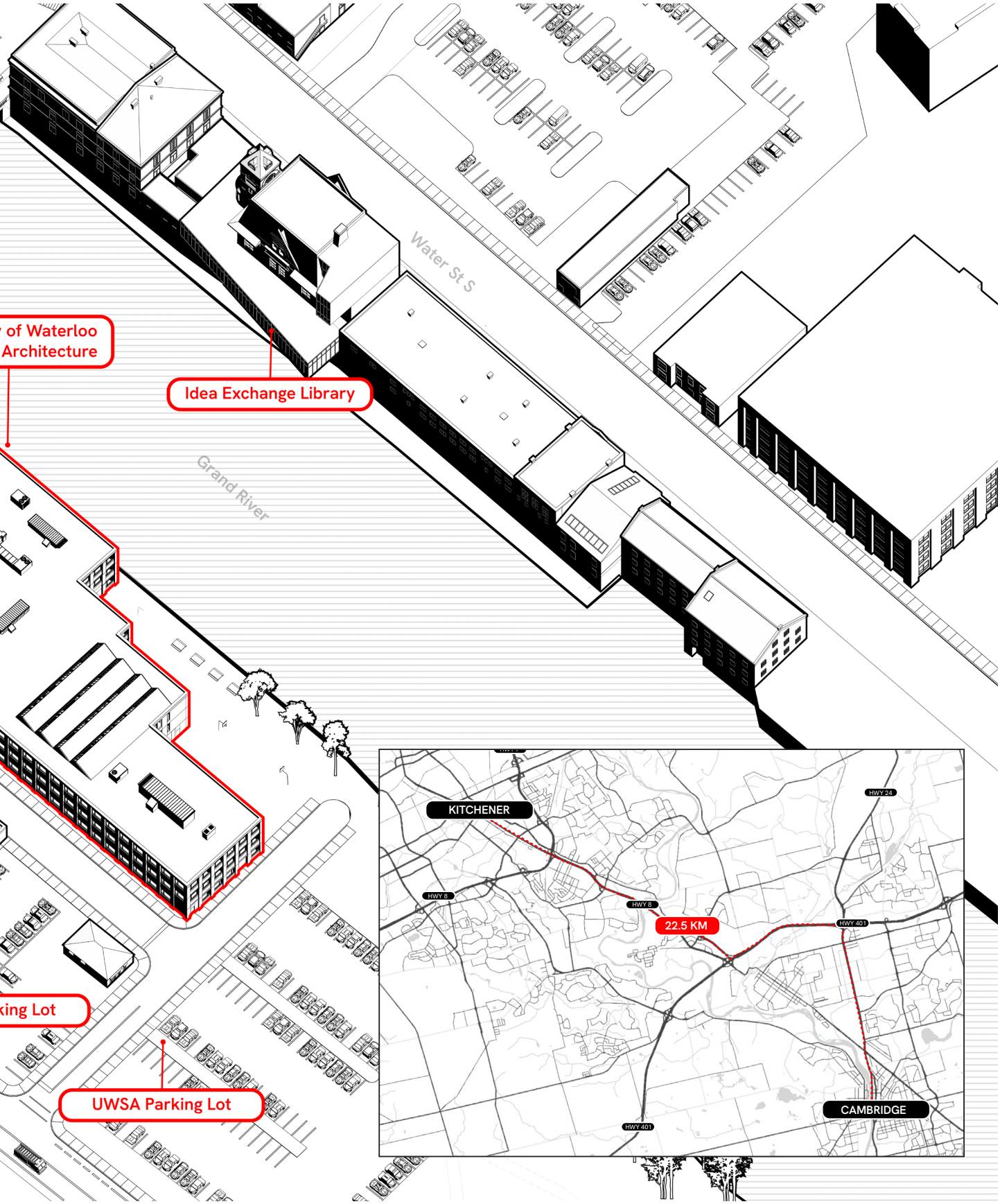


Figure 53: Drawing establishing the context of the University of Waterloo School of Architecture to downtown Cambridge and to the University of Water



loo Main campus.

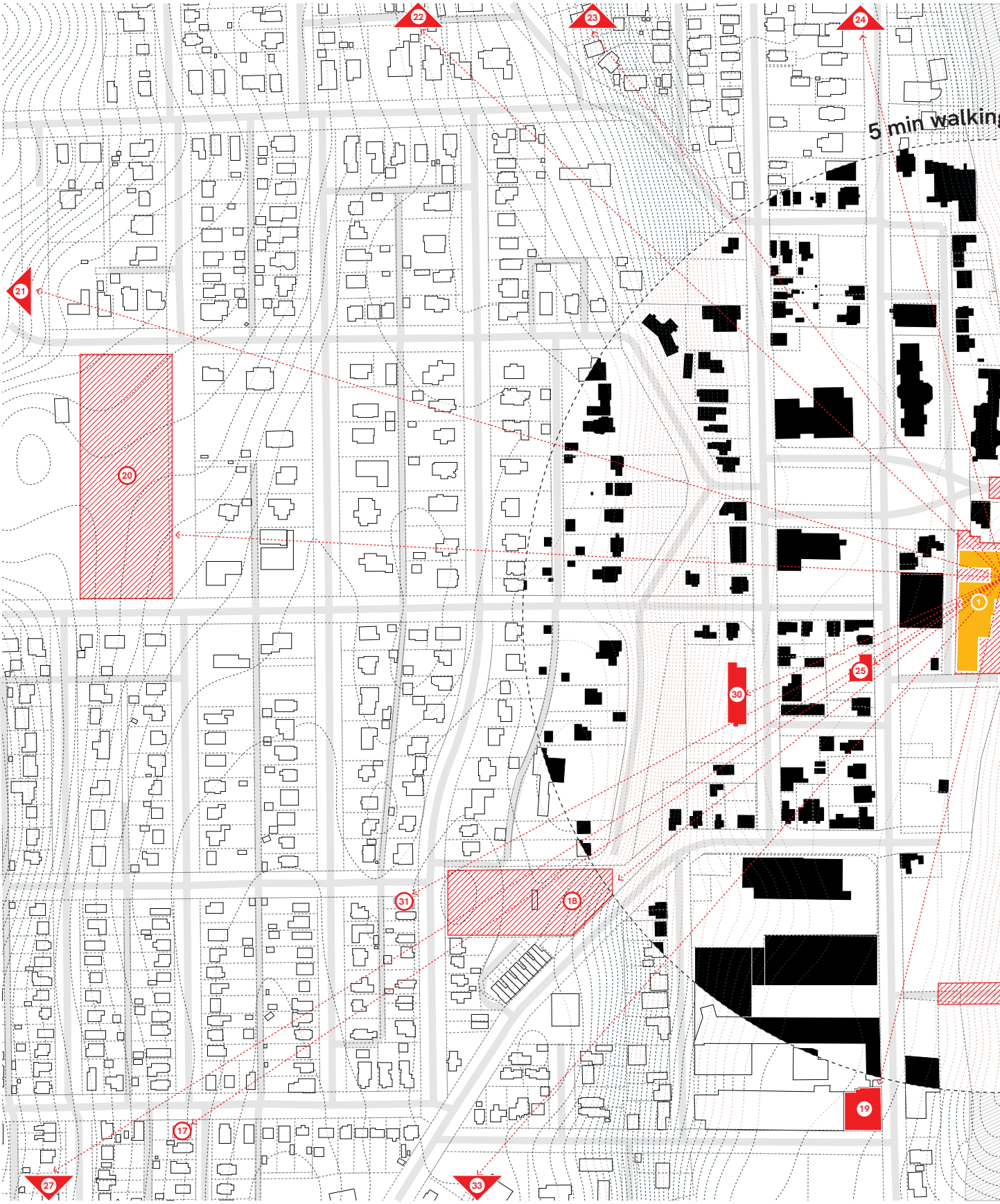
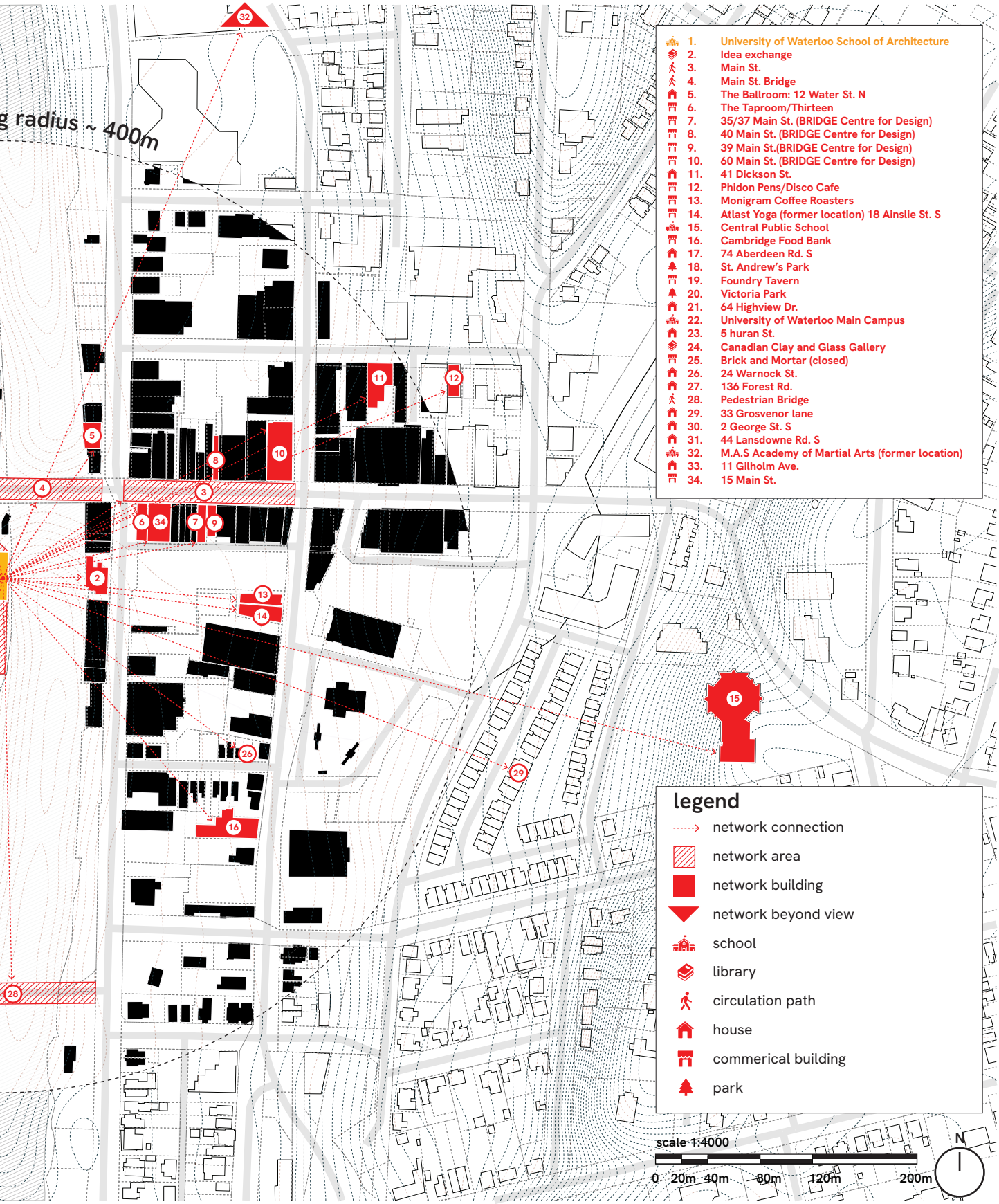


Figure 54: Site plan of downtown Cambridge, Ontario, illustrating the spatial network of past student occupied spaces.


g radius ~ 400m
1. University of Waterloo School of Architecture
2. Idea exchange
3. Main St.
4. Main St. Bridge
5. The Ballroom: 12 Water St. N
6. The Taproom/Thirteen
7. 35/37 Main St. (BRIDGE Centre for Design)
8. 40 Main St. (BRIDGE Centre for Design)
9. 39 Main St.(BRIDGE Centre for Design)
10. 60 Main St. (BRIDGE Centre for Design)
11. 41 Dickson St.
12. Phidon Pens/Disco Cafe
13. Monigram Coffee Roasters
14. Atlast Yoga (former location) 18 Ainslie St. S
15. Central Public School
16. Cambridge Food Bank
17. 74 Aberdeen Rd. S
18. St. Andrew's Park
19. Foundry Tavern
20. Victoria Park
21. 64 Highview Dr.
22. University of Waterloo Main Campus
23. 5 huran St.
24. Canadian Clay and Glass Gallery
25. Brick and Mortar (closed)
26. 24 Warnock St.
27. 136 Forest Rd.
28. Pedestrian Bridge
29. 33 Grosvenor lane
30. 2 George St. S
31. 44 Lansdowne Rd. S
32. M.A.S Academy of Martial Arts (former location)
33. 11 Gilholm Ave.
34. 15 Main St.
legend
network connection
network area
network building
network beyond view
school
library
circulation path
house
commerical building
park
scale 1:4000
0 20m 40m 80m 120m 200m
N

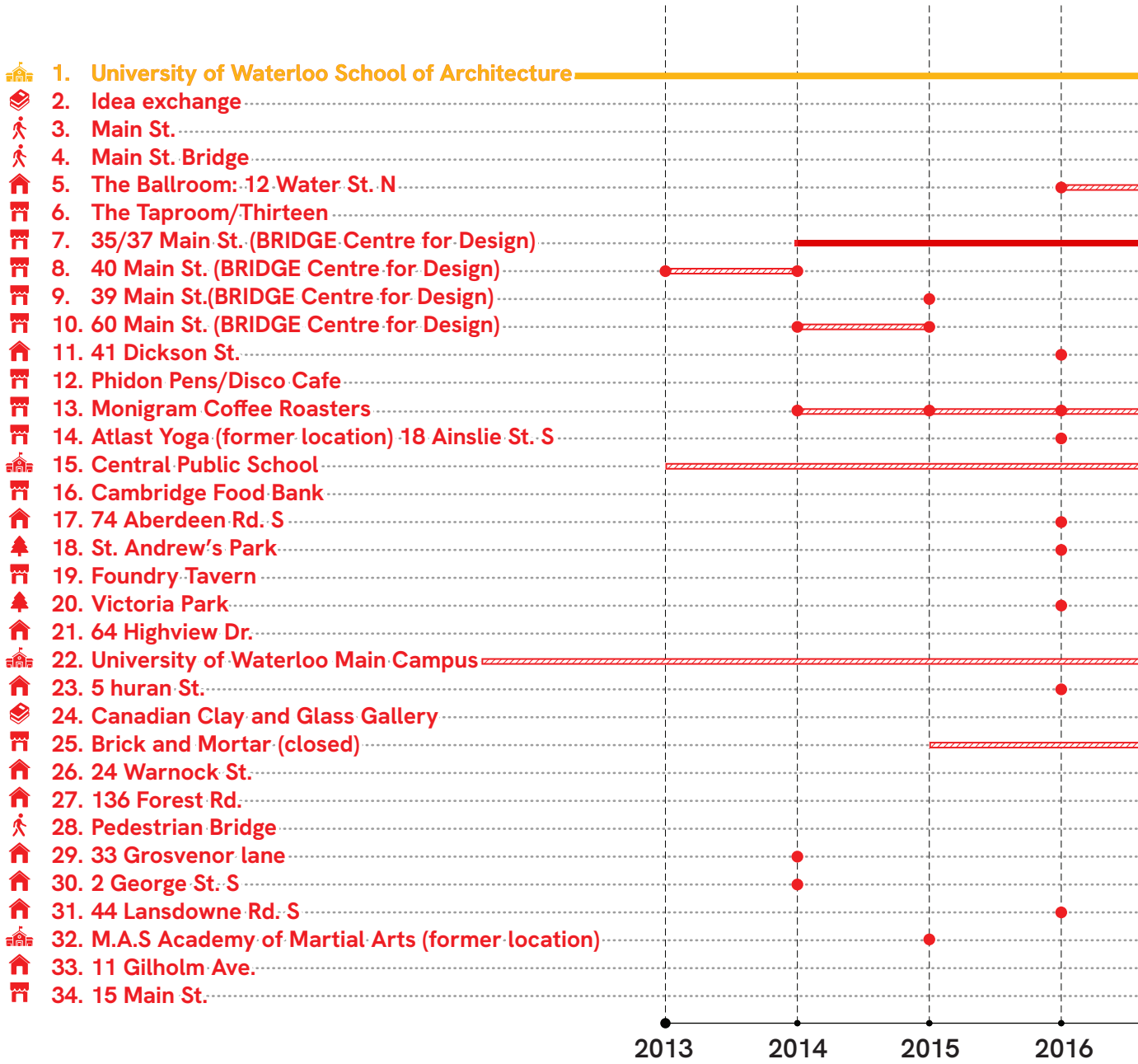
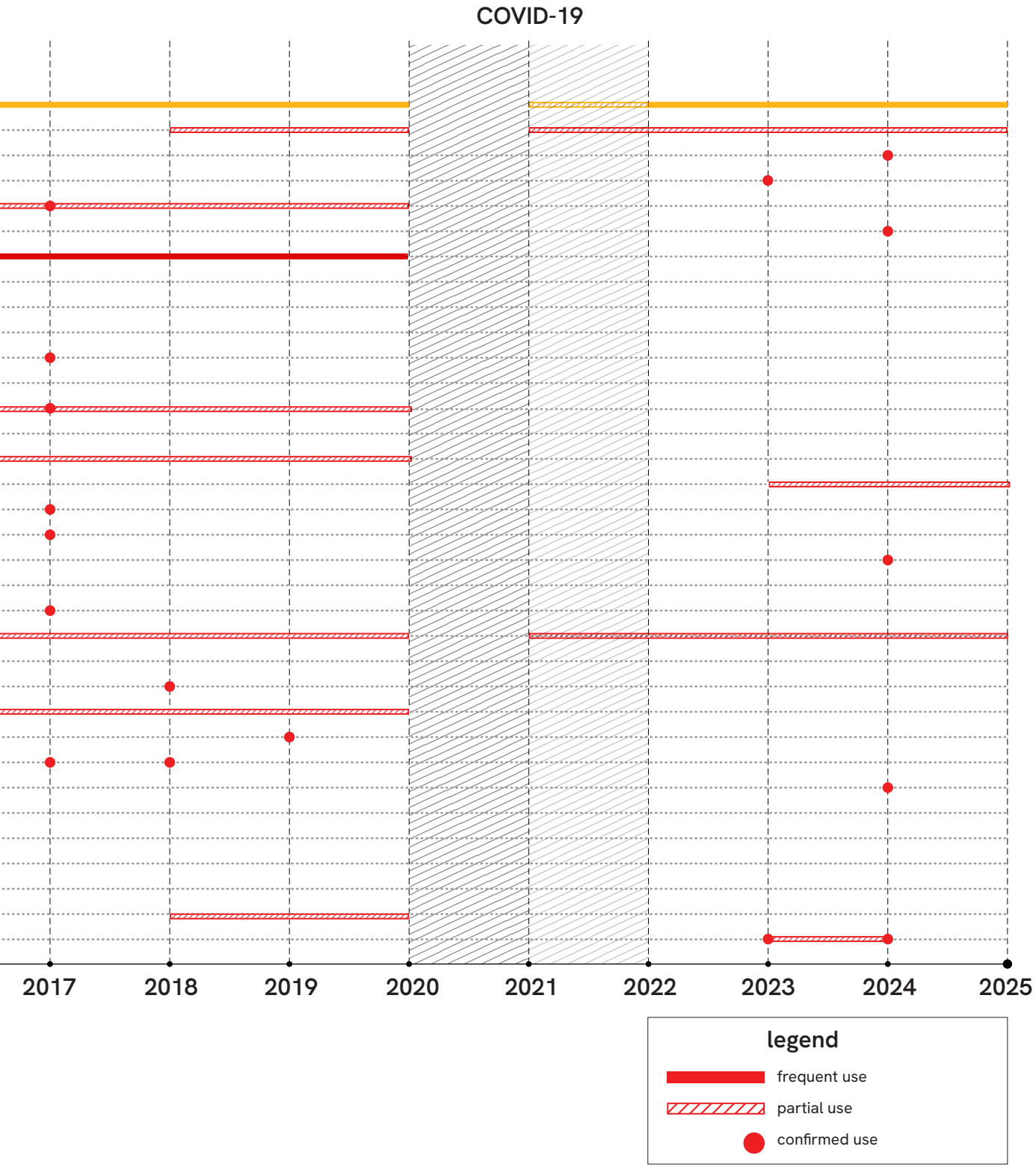


Figure 55: Timeline of the student occupied spaces, with a disconnect occuring during 2020-2022 due to the pandemic.


COVID-19
2017
2018
2019
2020
2021
2022
2023
2024
2025
legend
frequent use
partial use
confirmed use

Documenting Community Networks

The previous diagram examined past and present networks linking the School of Architecture to the local community, highlighting spaces that support student and school initiatives (see Fig. 56-64). It emphasized the role of non-human actors in shaping the socio-spatial fabric of the area. It also revealed a sharp decline in the outward extension of student use following the pandemic. Although some instances of use exist, many of these spaces have been limited to single-use scenarios, primarily serving as commercial venues for formal events. However, the use of infrastructural spaces such as Main Street, the Main Street Bridge, and Pedestrian Bridge suggests an effort to reestablish connections in more permanent settings, particularly when temporary or transient spaces are less accessible.

The following diagram maps the networks of groups and people that operate in and around the school (see Fig. 65). It consists of students, staff, faculty, and various community organizations, such as the municipality, community groups, and commercial business owners. These groups form a network of human actors, many of whom serve as community partners with the School of Architecture, fostering relationships and supporting one another. However, while the school and the community exist in parallel, each group holds specific overarching jurisdictions over space, which often overlap. Through these negotiations, these groups find initiatives to operate within the margins.

Beyond these structures of control, the school population has remained largely confined to their building, with less instances of outreach within the last few years. Identifying the many groups and organizations within the city provides an opportunity to understand who, in particular, has authority over certain spaces. In addition, illustrating these networks offers insight into the distinction between smooth or striated spaces and broadens the actors involved in shaping local space and its usage. It also enhances student autonomy by showcasing the list of actors active in the contexts of the school, providing them with information that could assist in future projects, initiatives or outreach.

This understanding can generate discourse or negotiations between spatial usage, create an open dialogue that can assist in navigating the margins, and re-establish community resilience lost in the gap following the pandemic. It can also prompt a re-integration of the school into the broader conversations of the city, showcasing the potential for student initiatives and solidifying the culture of the School of Architecture as active participants in shaping Cambridge’s identity.



Figure 56: End of term celebration and retirement party for Ryszard Sliwka



Figure 57: Photograph of BRIDGE Workshop at Clemens Mill Public School



Figure 58: StopGap ramp infront of Play With Clay



Figure 59: First club event for On Empathy, hosted at a students house.



Figure 60: Photograph of the Cambridge Commons Exhibition in Cambridge City Hall



Figure 61: Photograph of architecture students playing dogeball at Central Public School



Figure 62: Student talk "Giving Mountains, by Currim Suteria, in a students backyard.



Figure 63: Photograph of the 2013 Rome Show at the Grand House



Figure 64: "Urban Homesteading- Rethinking Urban Site As Productive Land" with Janna Levitt at Dalton Court

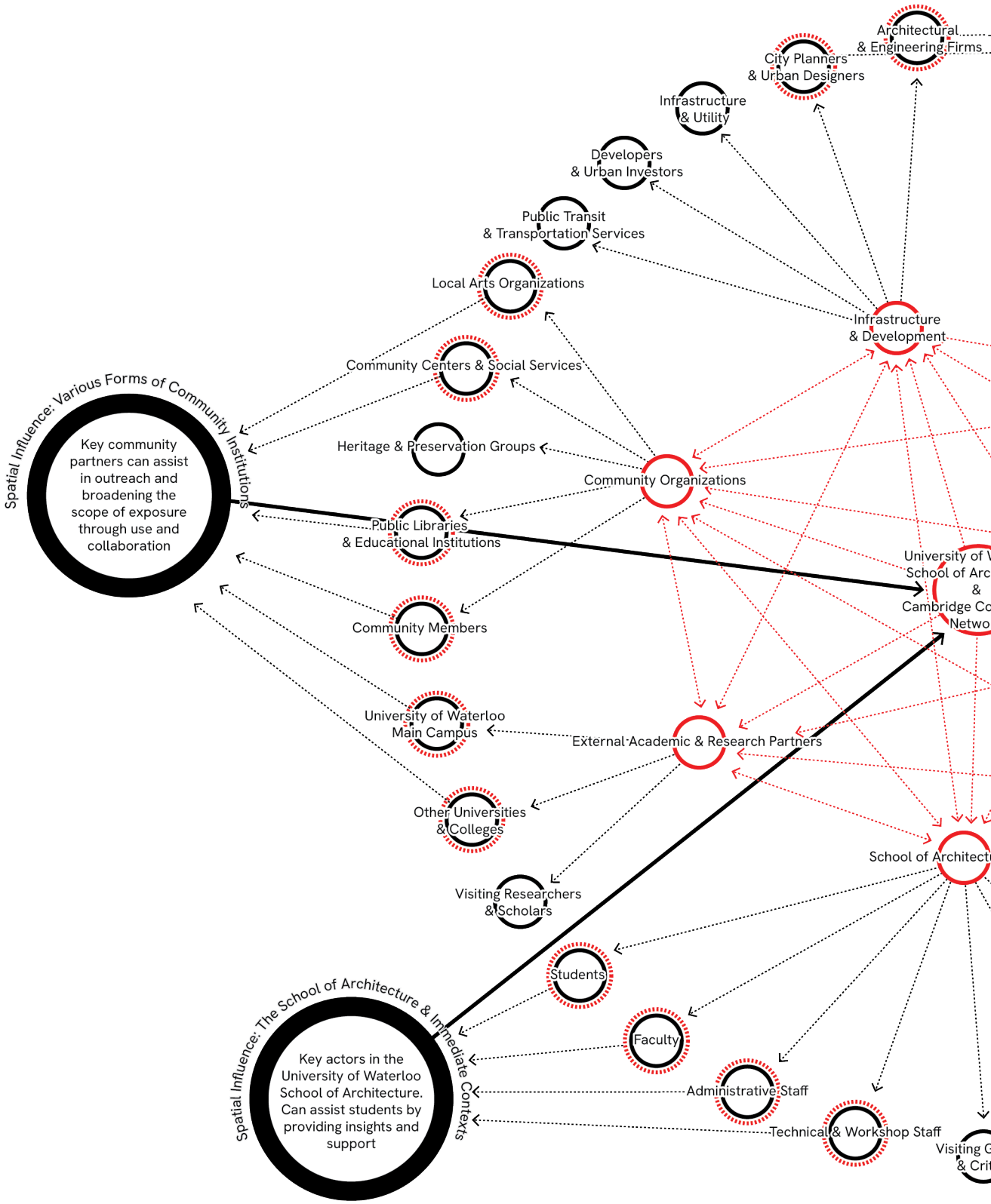
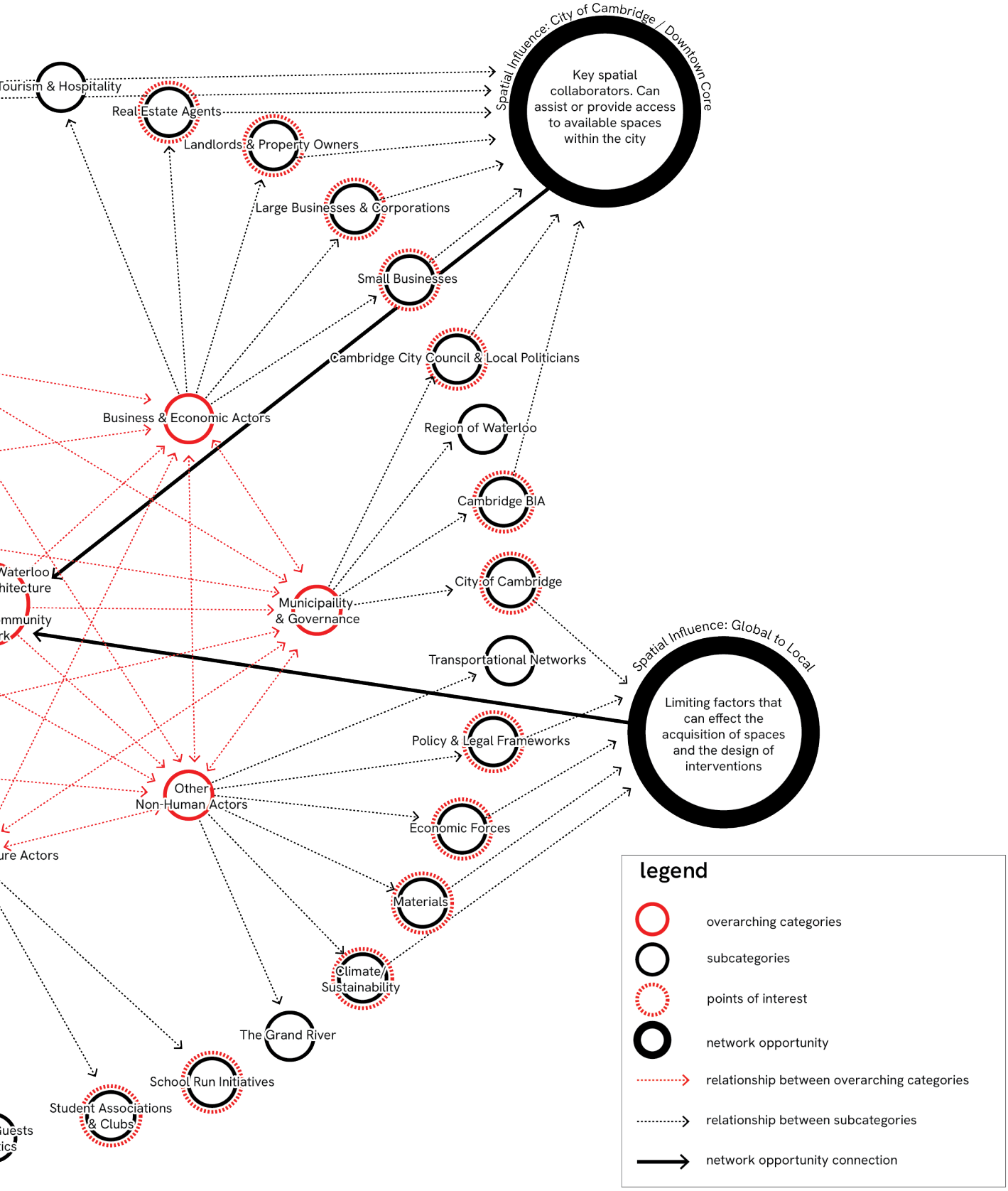


Figure 65: Actor-Network Theory network plan of the actors within the downtown area of Cambirdge and the University of Waterloo School of Architec


Spatial Influence: City of Cambridge / Downtown Core
Key spatial collaborators. Can assist or provide access to available spaces within the city
Tourism & Hospitality
Real Estate Agents
Landlords & Property Owners
Large Businesses & Corporations
Small Businesses
Cambridge City Council & Local Politicians
Business & Economic Actors
Region of Waterloo
Cambridge BIA
City of Cambridge
Municipaility & Governance
Transportational Networks
Spatial Influence: Global to Local
Limiting factors that can effect the acquisition of spaces and the design of interventions
Policy & Legal Frameworks
Other Non-Human Actors
Economic Forces
Materials
Climate Sustainability
The Grand River
School Run Initiatives
Student Associations & Clubs
legend
overarching categories
subcategories
points of interest
network opportunity
relationship between overarching categories
relationship between subcategories
network opportunity connection

ture.

Immediate Networks

In examining the broader social and spatial networks, the School of Architecture can be viewed as a central node and a key point of connection within these systems. At the same time, it generates its own network of associations and relationships between the immediate surrounding contexts, most notably through its physicality as a building within the neighborhood (see Fig. 66-67). Comparatively, these connections can appear less significant to the broader networks, but they play a substantial role in translating the relationship of community members to the school.

These connections highlight ways in which the school remains engaged with the community despite its absence in recent years. The persistence of these connections showcases the dynamic nature of a seemingly static building, where the act of simply existing within space informs experiences and perceptions. In addition, it underscores the organic relationships formed through use, transparency, and spatial negotiation, deconstructing the notion that institutional presence is defined solely by its formal structure.

Furthermore, it highlights the ways in which the mundane can be overlooked. Spaces which often go unnoticed present themselves as opportunities to exemplify their existing conditions through design. These spaces, which remain on the margins of institutional agendas, lend themselves to everyday life, acting as grey areas or connecting elements that ground the institution within lived reality. While these interactions do not adhere to or abide by the school's institutional frameworks, they reflect the dialogue between the smooth spaces of the exterior and striated spaces of the building, operating between its many oscillations.

By understanding the immediate connections, it displays ways in which the school continues to be acknowledged without direct institutional outreach. These small yet meaningful interactions range from casual exchanges and informal use to the simple act of looking through a window. This reveals the potential of engagement with the immediate network through a variety of scales, emphasizing the importance of considering how non-human actors such as windows, courtyards, basketball courts etc., can inform connection. It highlights the importance of documenting and preserving transient interactions as it might inform future design strategies for the school. It ensures that new generations of students inherit and understand how others navigate their space.

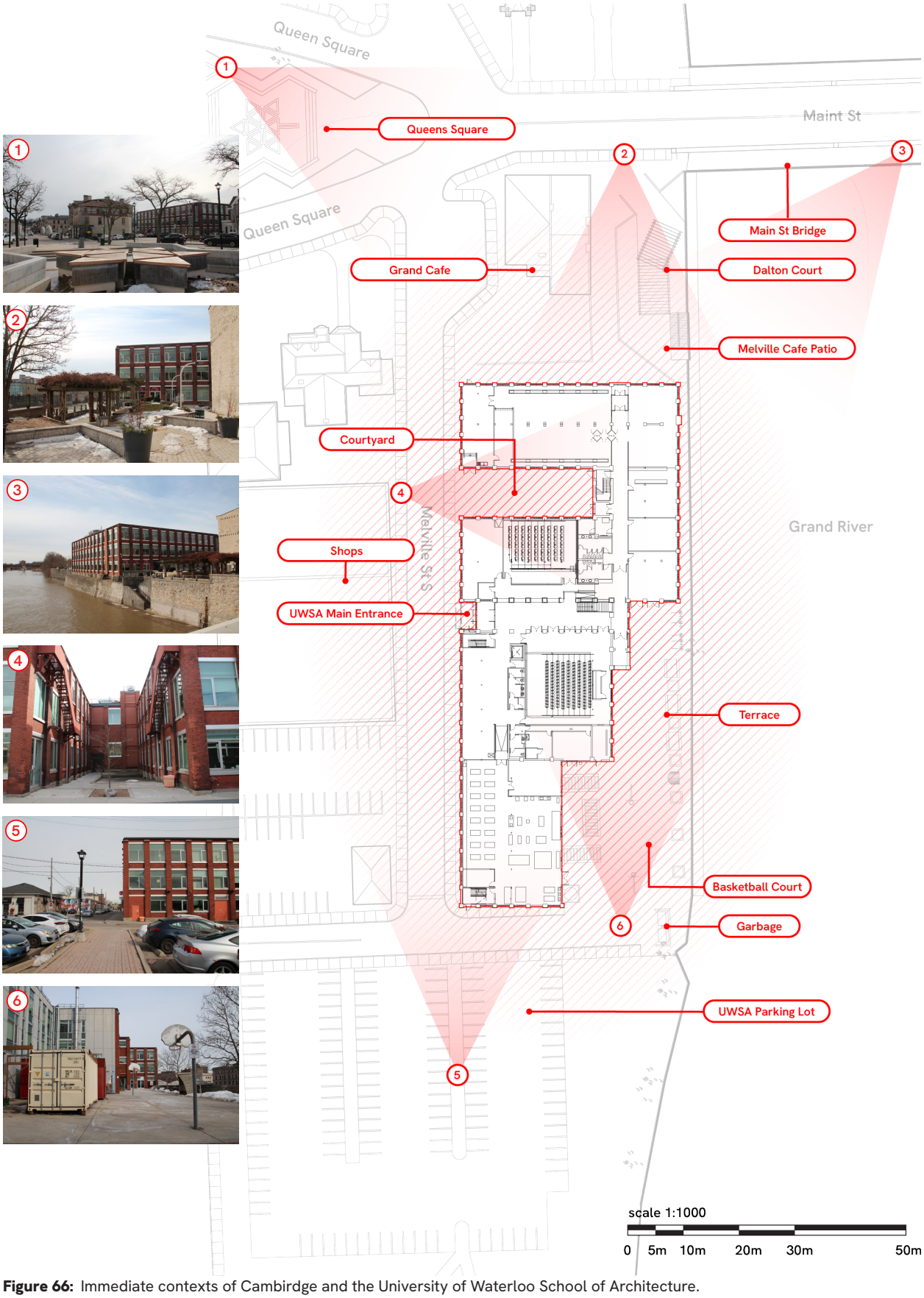


Figure 66: Immediate contexts of Cambirdge and the University of Waterloo School of Architecture.

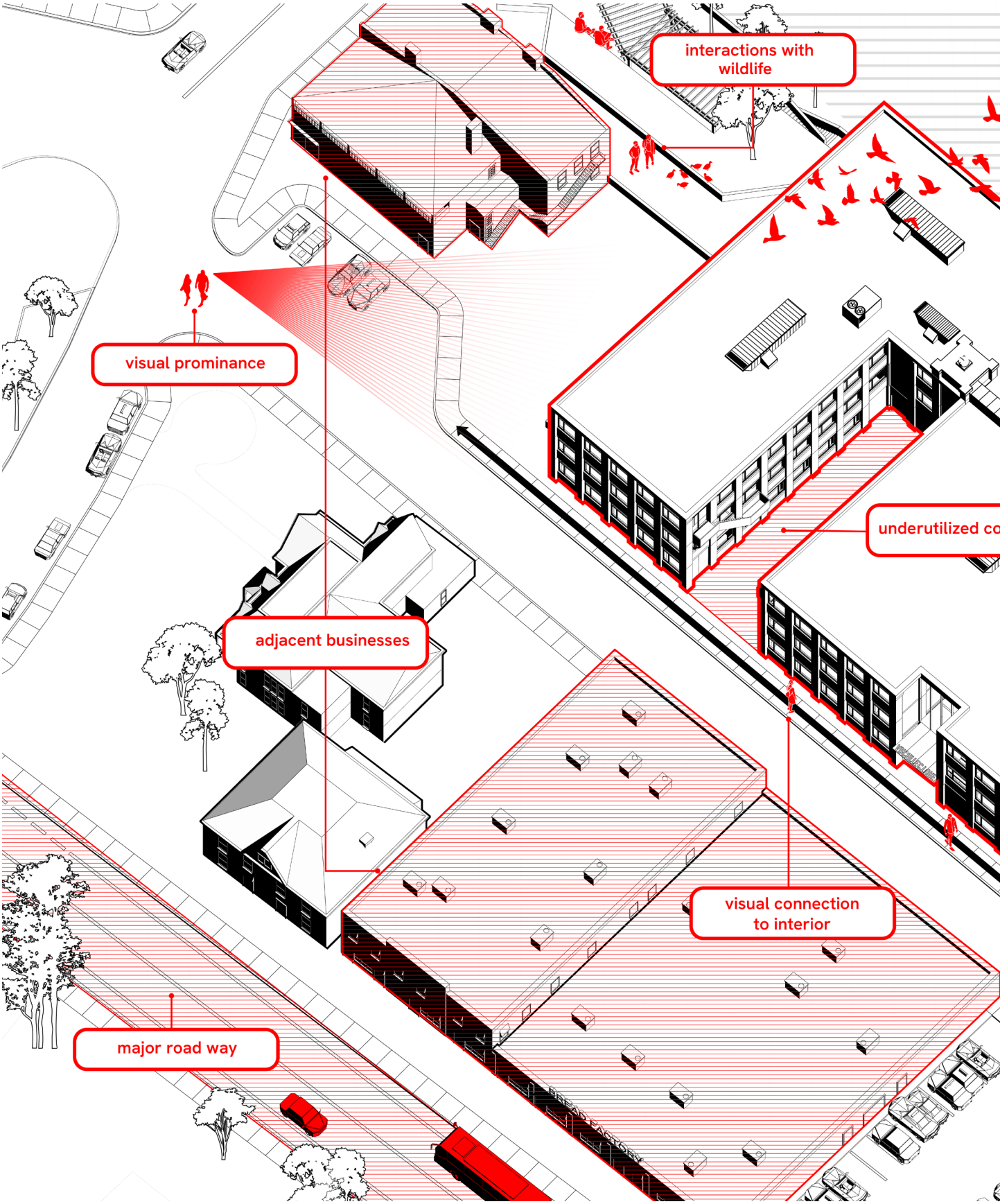
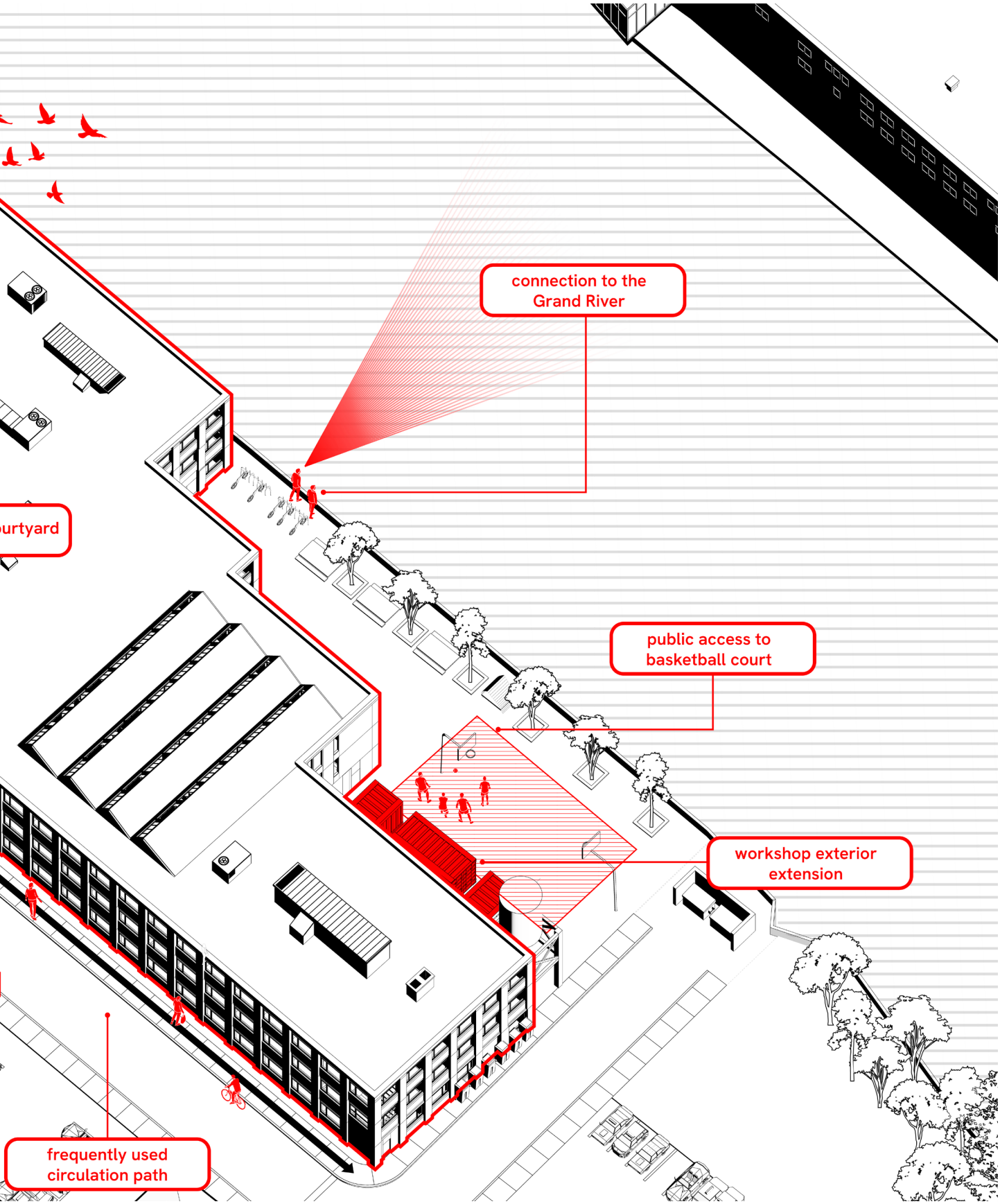


Figure 67: Spatial connections of the immediate surroundings of the School of Architecture.


connection to the Grand River
urtyard
public access to basketball court
workshop exterior extension
frequently used circulation path

Tactical Urbanism Approaches to the Exterior

The previous diagram identified numerous interactions between the school and the local community, often taking the form of informal connections. While these interactions mediate the relationship between both groups, they also present valuable opportunities for students to engage with their surroundings in meaningful ways. These moments of exchange shape how the community perceives and responds to the school, while simultaneously influencing how the school, as a physical and institutional entity, integrates with its urban context. Rather than being passive occurrences, these interactions hold the potential to materialize into tangible design interventions, serving as both learning opportunities for students and functional amenities for the broader community.

Prior to the pandemic, multiple student-led interventions emerged in the areas surrounding the school (see Fig. 68-73), demonstrating how students have appropriated underutilized or unconventional spaces within their immediate contexts. These interventions range from temporary structures to site-specific activations, showcasing an adaptive and responsive approach to spatial design. By engaging directly with their environment, students challenge the conventional boundaries of architectural education, transforming the immediate contexts into a site of active experimentation where design is informed by lived experience, social interaction, and material exploration. Such initiatives not only strengthen the relationship between the school and its surroundings but also underscore the role of architecture as a participatory and evolving practice, shaped through continuous negotiation between designers, users, and the built environment.

The following proposals are not intended to be definitive or prescriptive but rather act as a starting point to re-initiate conversations regarding how to extend the presence of the school outward, inviting dialogue and collaboration within the local contexts (see Fig. 74). Much like Tactical Urbanism, these interventions are conceived as catalysts which initiate engagement at both an institutional and community level. Similarly, it hopes to catalyze conversations on why or why not these are not currently in place.

Experimenting with speculative design interventions in this manner reorients the designer not as a producer of commodifiable artifacts but as an active citizen who critically engages their surroundings. It reinforces the idea that architectural agency extends beyond formalized projects into everyday spatial negotiations. Through this process, students are encouraged to take an active role in shaping not only their own space but that of the community as well.



Figure 68: "Building on Empathy" with Danielle Gignac, next to the parking lot.



Figure 69: Student Installation "The Hanging Wall" for the design studio Contemporary Landscapes



Figure 70: Student work for Nuit Blanche 2014 "PLANETERRAEUM"



Figure 71: Student work for Nuit Blanche 2014 "PLANETERRAEUM"



Figure 72: Student Installation "Strawsacpes" for the design studio Contemporary Landscapes



Figure 73: Student Installation "Slippage" for the design studio Contemporary Landscapes

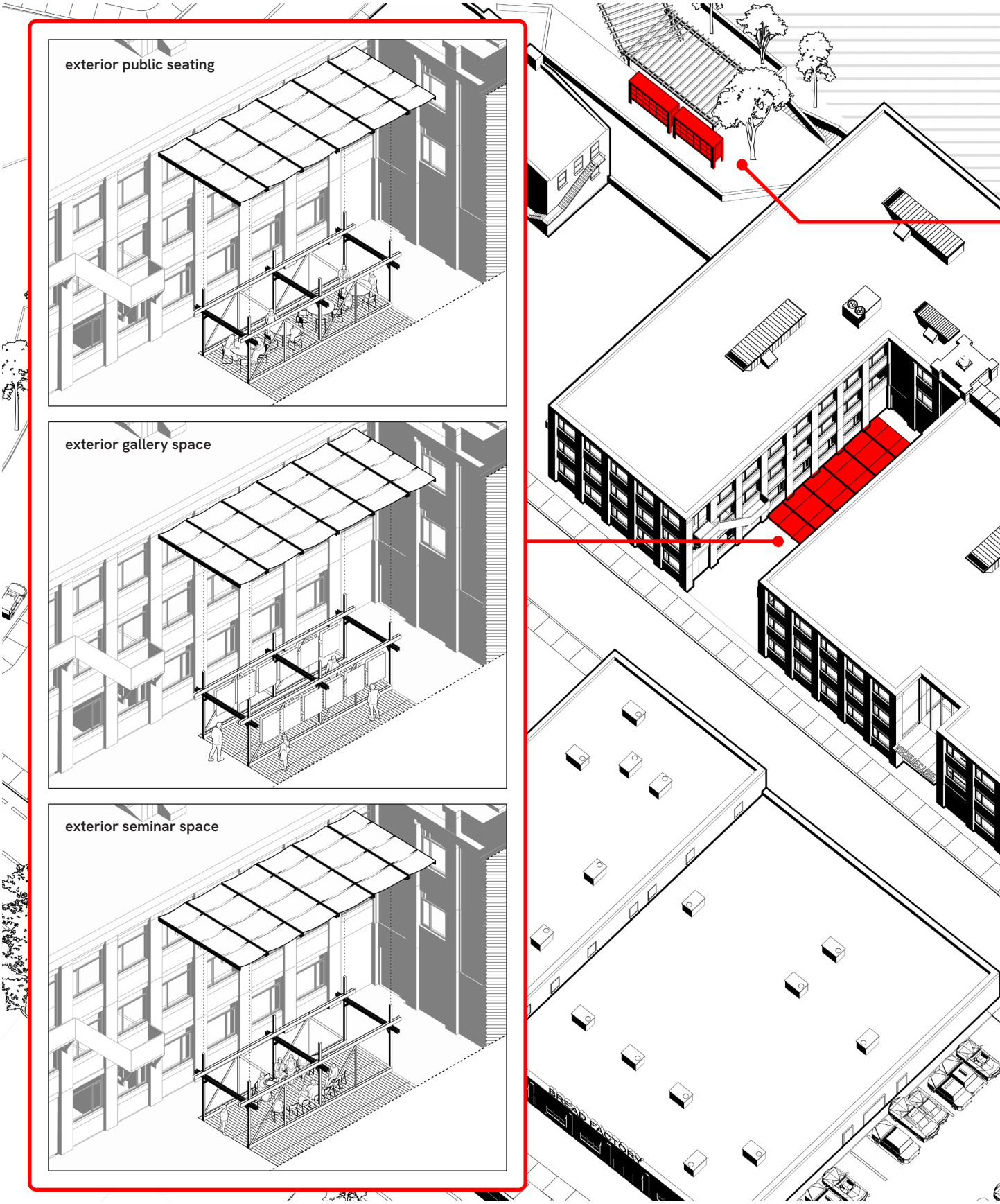
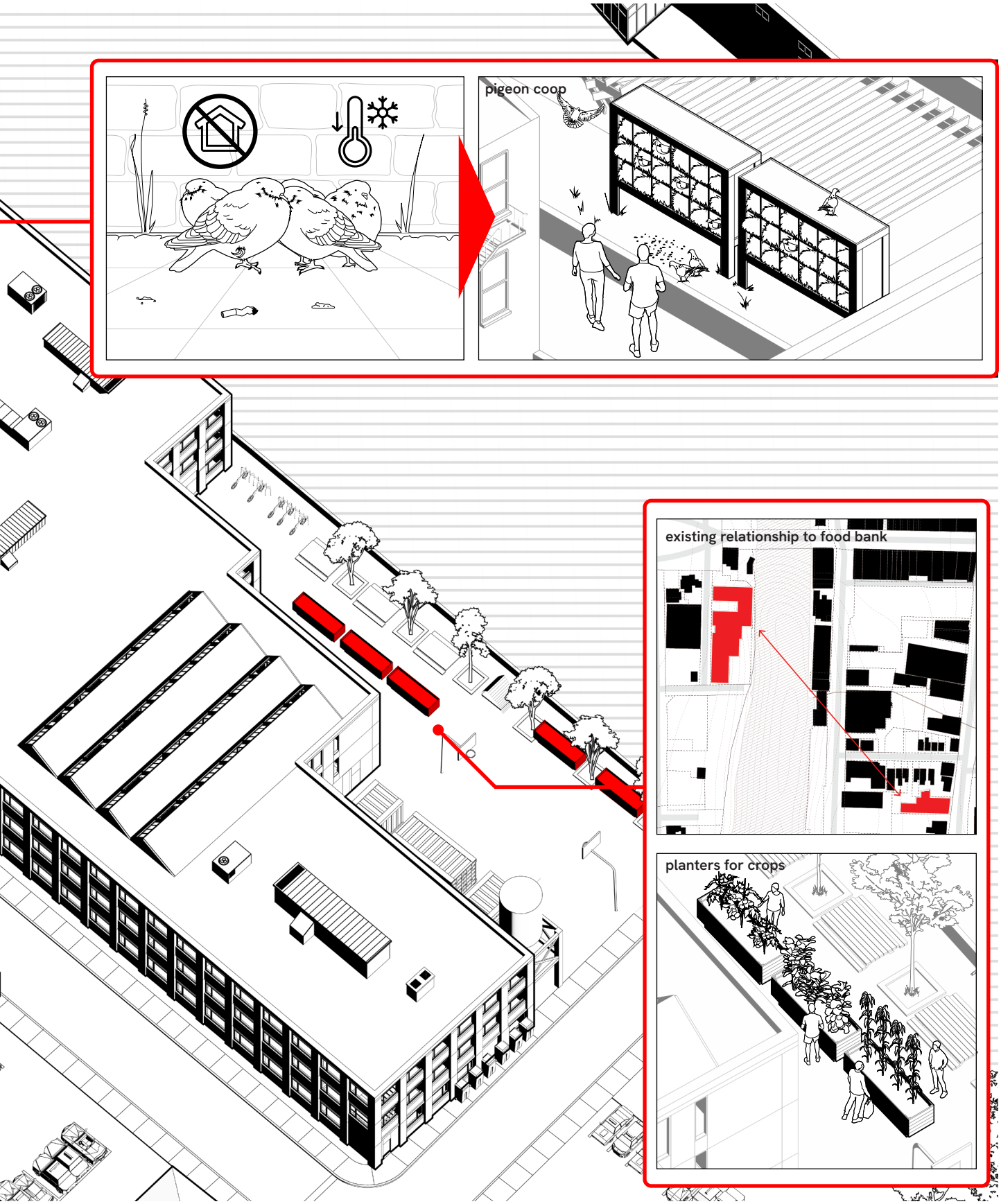


Figure 74: Proposed exterior interventions.


pigeon coop
existing relationship to food bank
planters for crops

Internal Networks and Authority

The interior of the School of Architecture can be examined using the same methodologies as the school's exterior explorations. By first mapping its networks, various human and non-human actors become identifiable (see Fig.75). This approach clarifies the relationships among diverse groups of individuals, objects, and forces that shape the School of Architecture, demonstrating how the built environment evolves through continuous interactions. These exchanges, in turn, inform how space is inhabited, regulated, or modified over time.

The second diagrams (see Fig.76-78) captures the spatial distribution of three categories of human actors, illustrating usage patterns and behavioural tendencies within each group. It underscores how accessibility, movement, and constraints influence navigation through the environment. In doing so, it fosters a deeper understanding of agency within the school, shedding light on the occupation of existing spaces and laying the groundwork for maneuvering their intricacies.

While previous diagrams illustrated the school's outward integration with its site context and the community, the mutually beneficial relationship between the School of Architecture and the Cambridge community is also evident internally. This relationship is most notably expressed at the school's northern entrance, where a hallway serves as a direct link between the school, Main Street, and the bridge connecting to the downtown core. This threshold houses some of the most publicly accessible areas within the school, including the Melville Café, a privately operated business within the institution's walls. Adjacent to the café, the Riverside Gallery, a public feature of the school, functions as a space for showcasing student work.

Perhaps the most significant yet understated public space within this corridor is the set of washrooms at the far end of the hall. While primarily serving patrons of the Melville Café, these facilities also provide a crucial amenity for the broader community, particularly unhoused individuals who may lack consistent access to bathrooms. Their presence within the school raises important questions about the role of a satellite campus in addressing broader social issues. As both an academic institution and a community stakeholder, the school holds the potential to cultivate a more reciprocal relationship with its local context, one that extends beyond architectural education to actively participate in addressing urban and social challenges. How might the school cultivate a reciprocal relationship, one that extends beyond architectural education to actively participate in local challenges? This example underscores that, despite the inherent institutionalization of the university, moments of connection and social responsibility emerge within its spaces.

These moments of connection and social responsibility highlight the margins within institutional spaces, areas where formal structures and policies intersect with informal, user-driven interactions. The spatial and social overlaps observed in the school's publicly accessible areas, such as the café, gallery, and washrooms, reveal how institutional boundaries are negotiated

and redefined through everyday use. Similarly, the areas within the school primarily accessed by staff, faculty, and students highlight the interplay between student agency and institutional control, connecting back to the spectrum of spatial tendencies previously discussed. These margins function as sites of exchange, where architectural education, community engagement, and broader social dynamics converge. Recognizing and understanding these grey areas offers a critical framework for exploring agency within the built environment, demonstrating that even within structured institutions, opportunities exist to challenge, adapt, and reimagine spatial relationships.

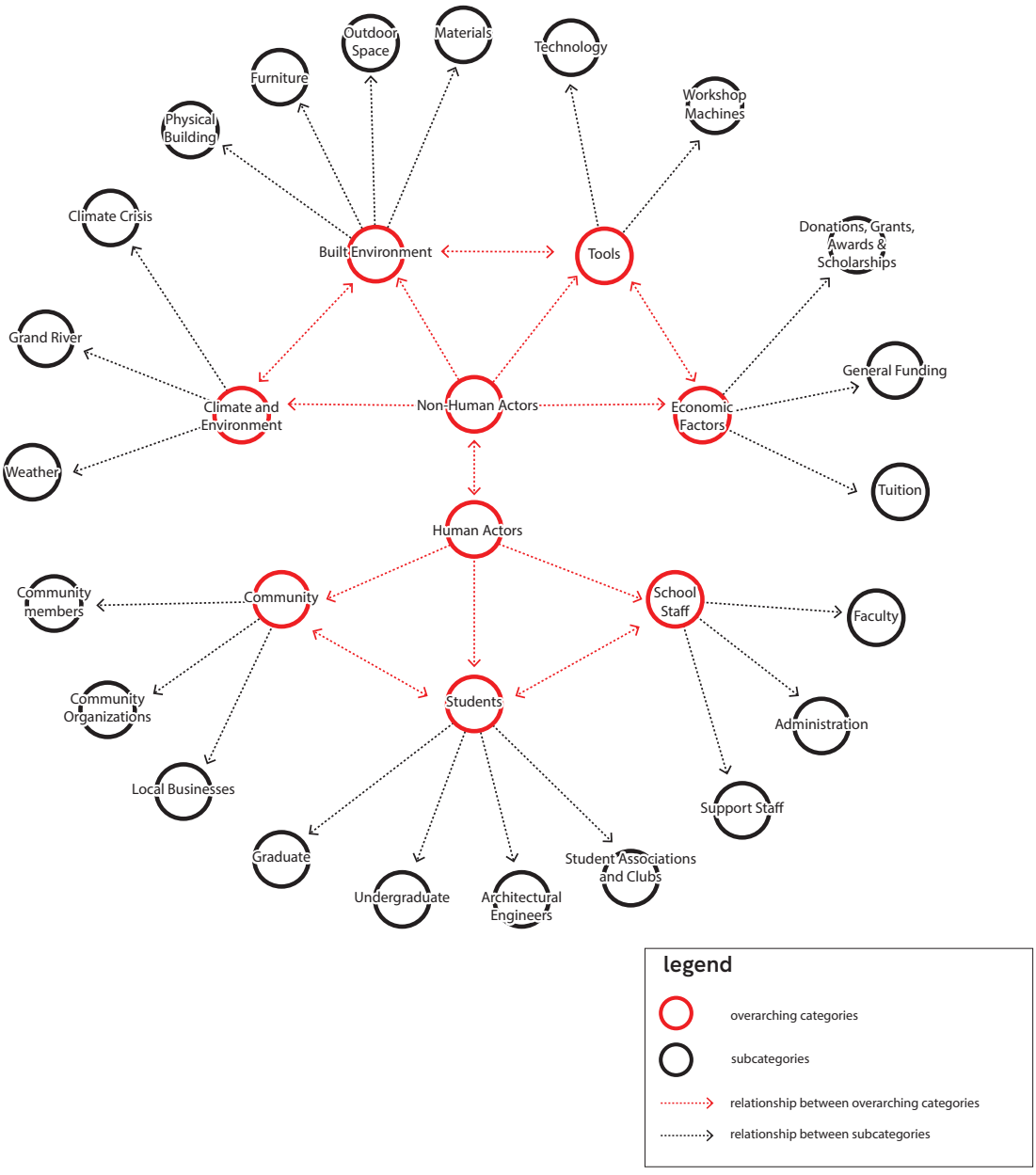


Figure 75: Actor-Network Theory network diagram of the internal connections in the School of Architecture.

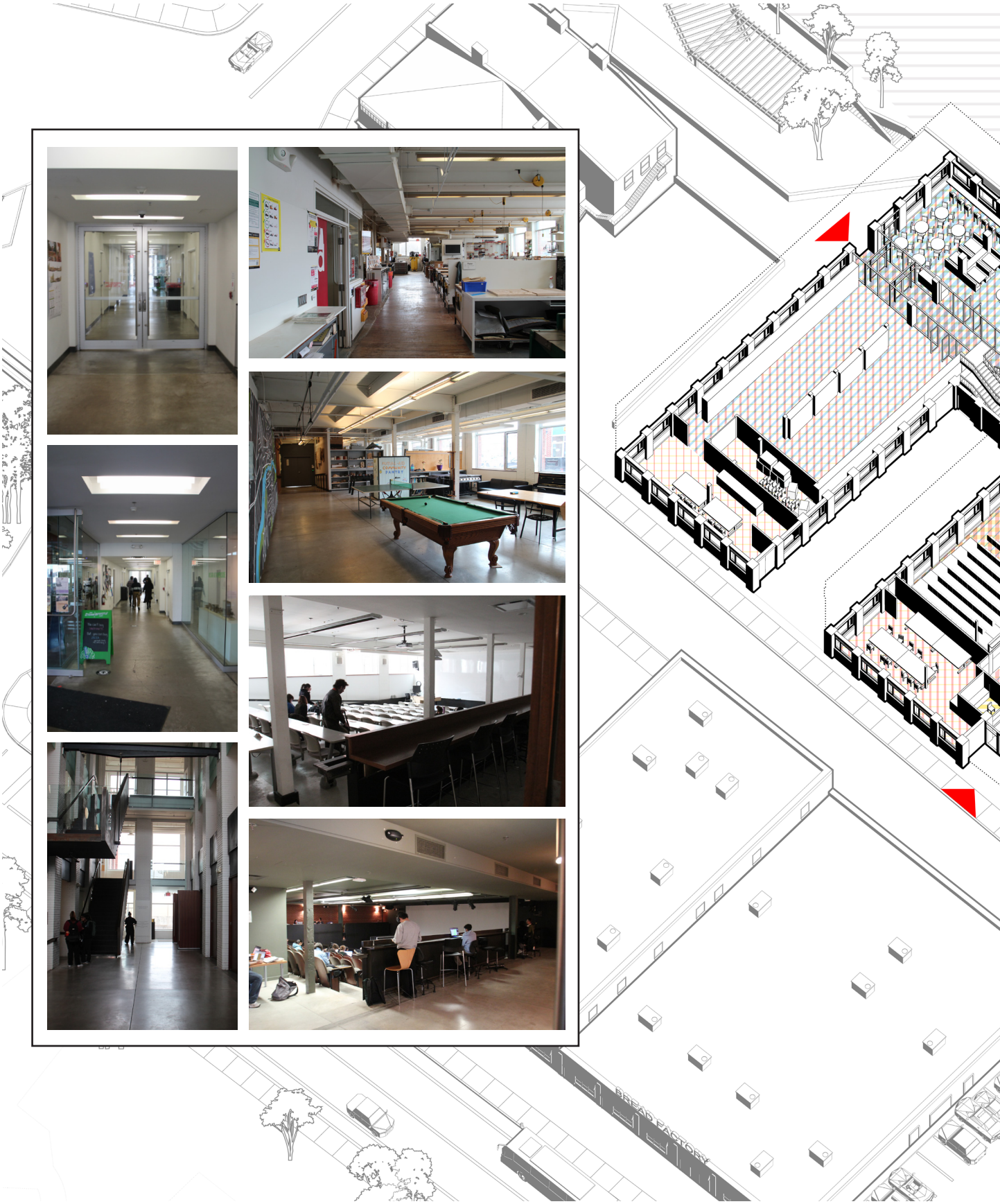
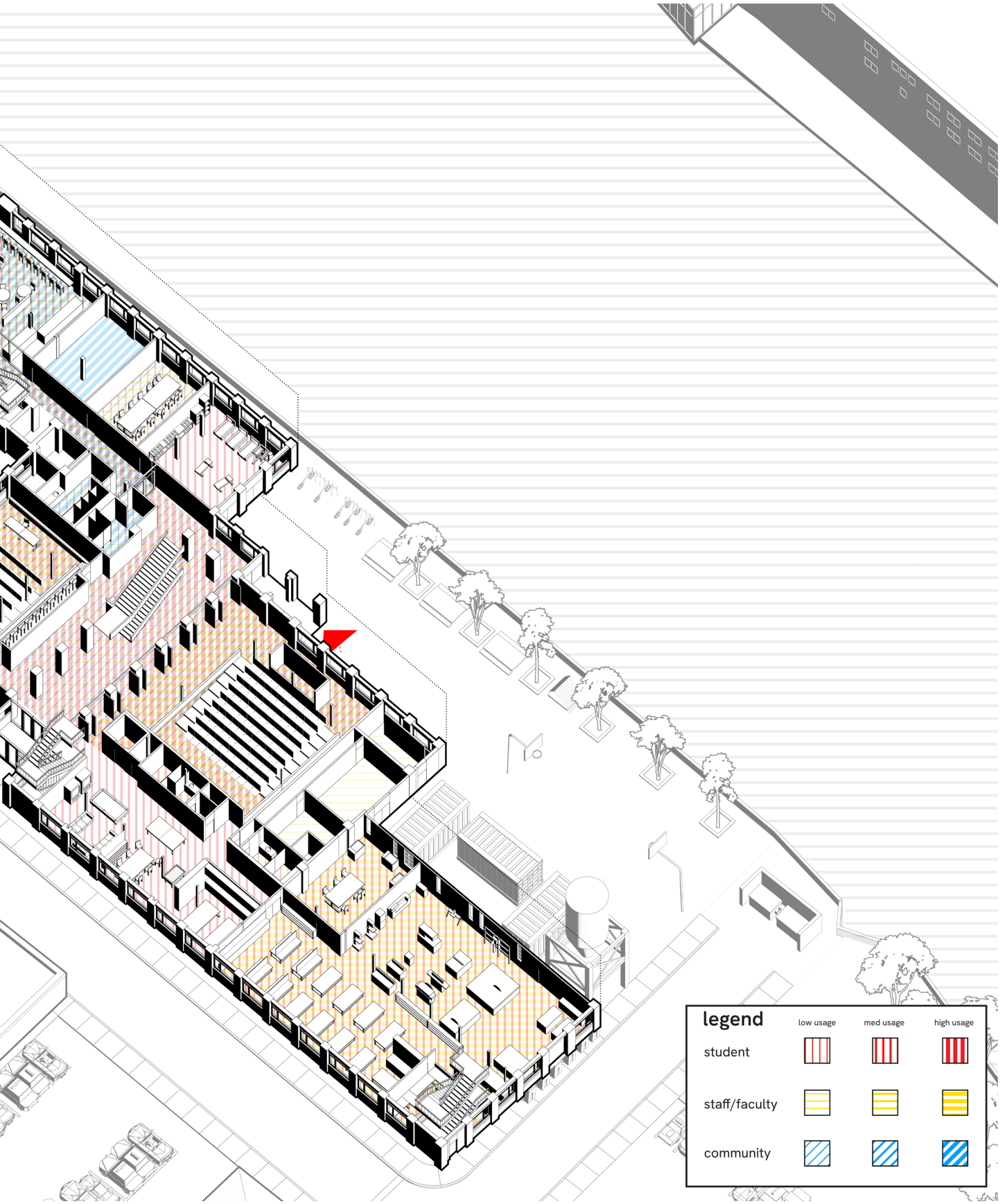


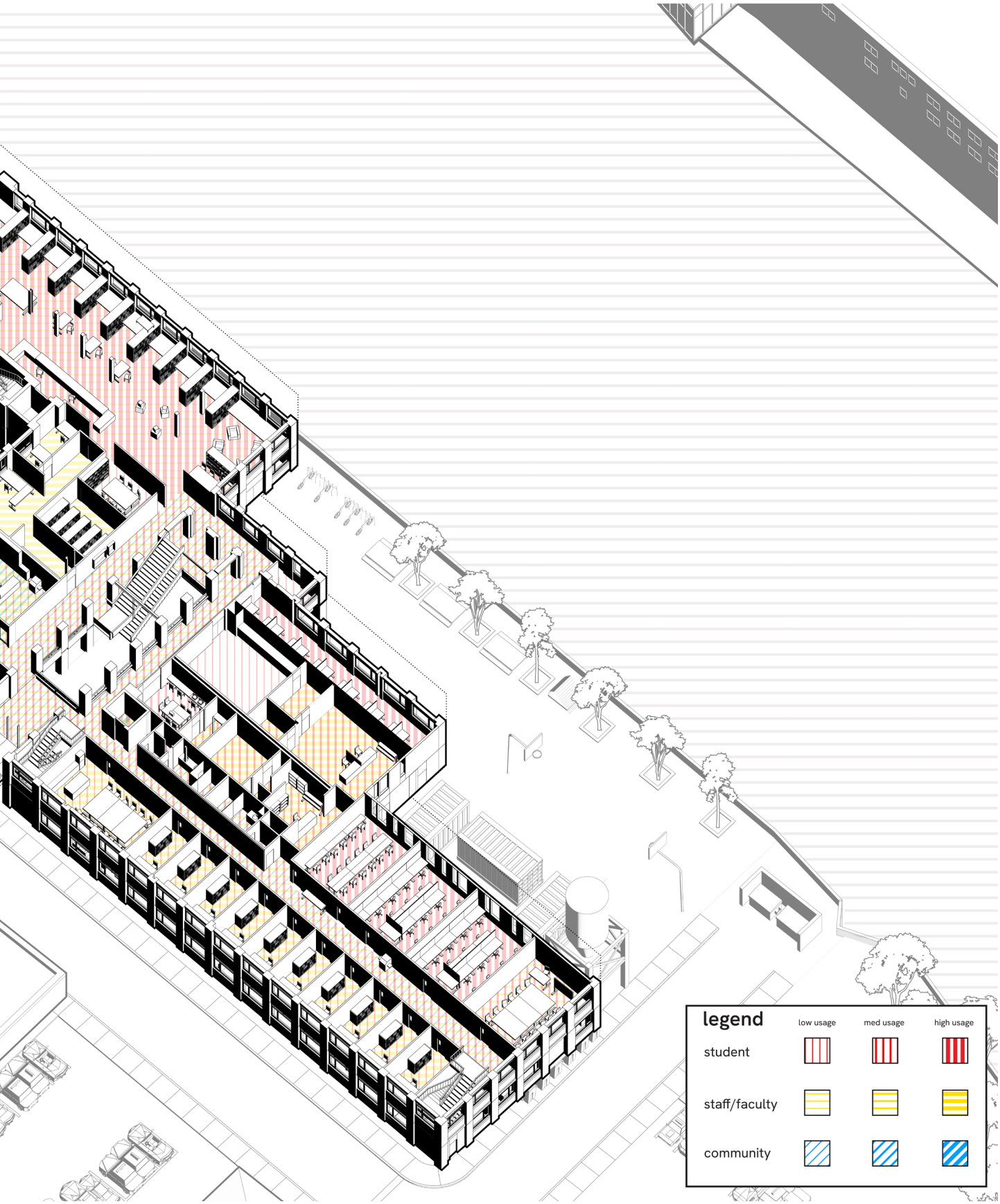
Figure 76: Diagram illustrating the frequency of spatial occupation by students, community members, and staff of the first floor of the School of Architec


legend
low usage
med usage
high usage
student
staff/faculty
community

cture.



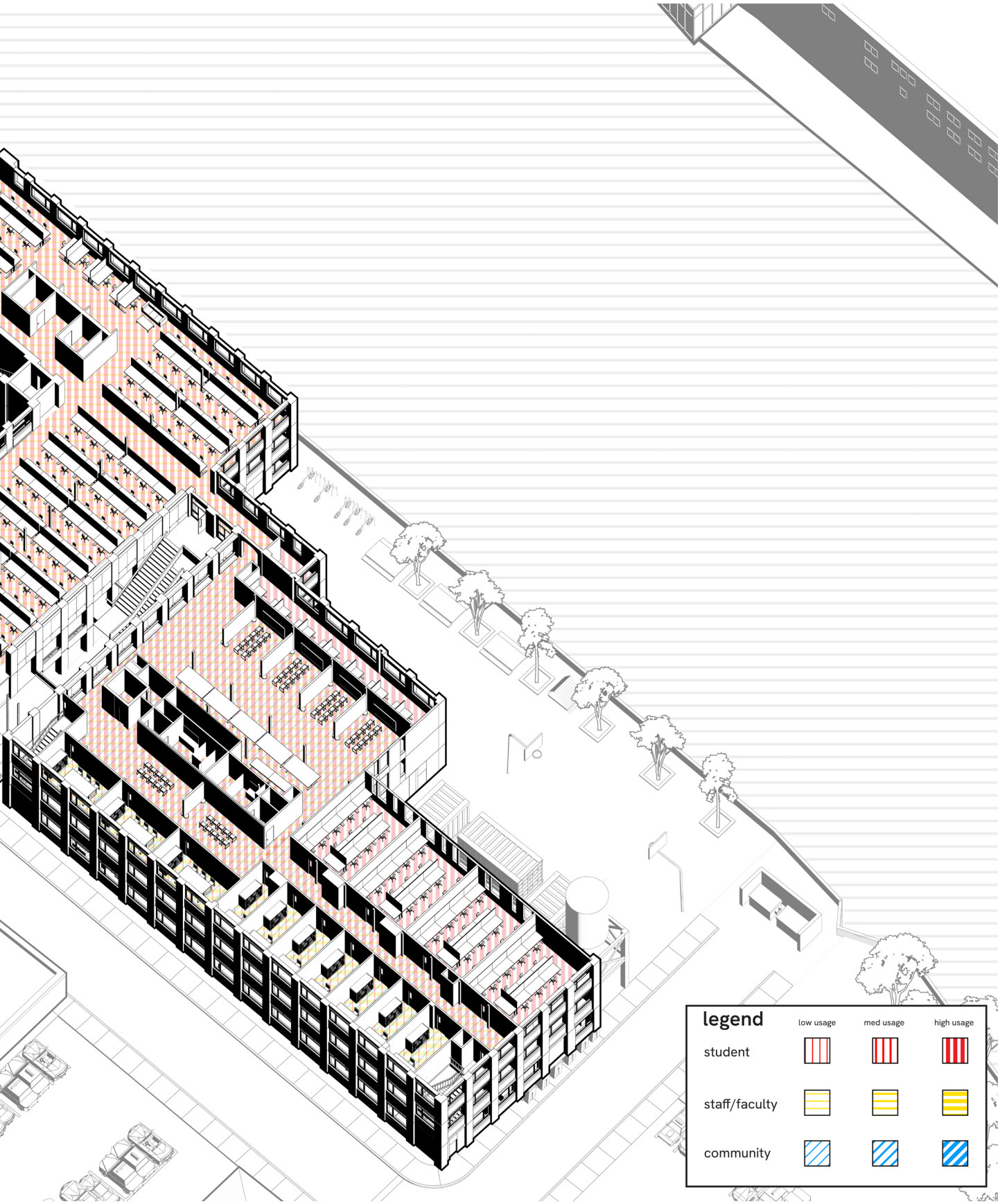
Figure 77: Diagram illustrating the frequency of spatial occupation by students, community members, and staff of the second floor of the School of Arch


legend
low usage
med usage
high usage
student
staff/faculty
community

itecture.



Figure 78: Diagram illustrating the frequency of spatial occupation by students, community members, and staff of th thrid floor of the School of Architec


legend
low usage
med usage
high usage
student
staff/faculty
community

cture.

Annotation Session at the School of Architecture

Even as a satellite campus, the School of Architecture remains embedded within the institutional process. Its fundamental role as a university imposes certain expectations, bureaucratic processes, and hierarchical frameworks that may limit a student's agency over school spaces. However, while the program encourages students to resist capitalist institutionalization in broader global contexts, through the teachings of sustainability, cultural history, and equitability, it remains complicit in its own role within the university system. The difficulty lies in aligning the principles taught within the program with the practices implemented in the school. How can participatory design processes be effectively taught when the school adheres to a top-down approach to shaping its internal spaces? If physical space determines an individual's perception of their role in society, then the design and governance of institutional spaces directly influence how students engage with agency, hierarchy, and spatial autonomy.

Mapping the school's interior networks has illustrated a clearer understanding of available access, agency, and existing connections. In doing so, the boundaries that define student and community usage have been identified, allowing students to work in and around the available areas. In this exercise, rather than determining fixed design solutions, an open-ended approach was taken when considering the design of these interventions. An annotation session, similar to the one done in Amsterdam previously noted, was carried out to explore a bottom-up approach to design.

Plan drawings of the three floors of the school were printed. Students were given three colours to visually and textually annotate their experiences, concerns, or ideas for space. The plans were set up near the main staircase, prompting students of various undergraduate and graduate cohorts to express their thoughts (see Fig.79-81).

This exercise, acting as documentation, critique, and speculation, saw a variety of notes. The students' input was used to generate a series of interventions, intending to improve existing spaces and set an example of the possibilities of design.

While this exercise proved fruitful in giving students an active voice, it possessed several shortcomings. While it was primarily received by students, the lack of input from staff, faculty, and community members neglected to address the concerns of all users. Furthermore, some students were under the impression that the school administration conducted this exercise and were hesitant to note negative reflections.

If this exercise were to be done again in the future, it would be beneficial to broaden the scope of input to all users and apply it each term to get the perspectives of multiple cohorts, staff, and faculty.

To reiterate, the following interventions are not meant to serve as definitive solutions but rather as a catalyst for future design. By recognizing the possibility of design applications such as

these, students can recognize that they possess the ability to modify and improve the spaces they inhabit. This prompts a sense of agency and reinforces the idea that spatial transformation does not always require large-scale intervention but can emerge through everyday adaptation and reconfiguration with minimal resources.



Figure 79: Image of students participating in the annotation session of the school. Image taken by author

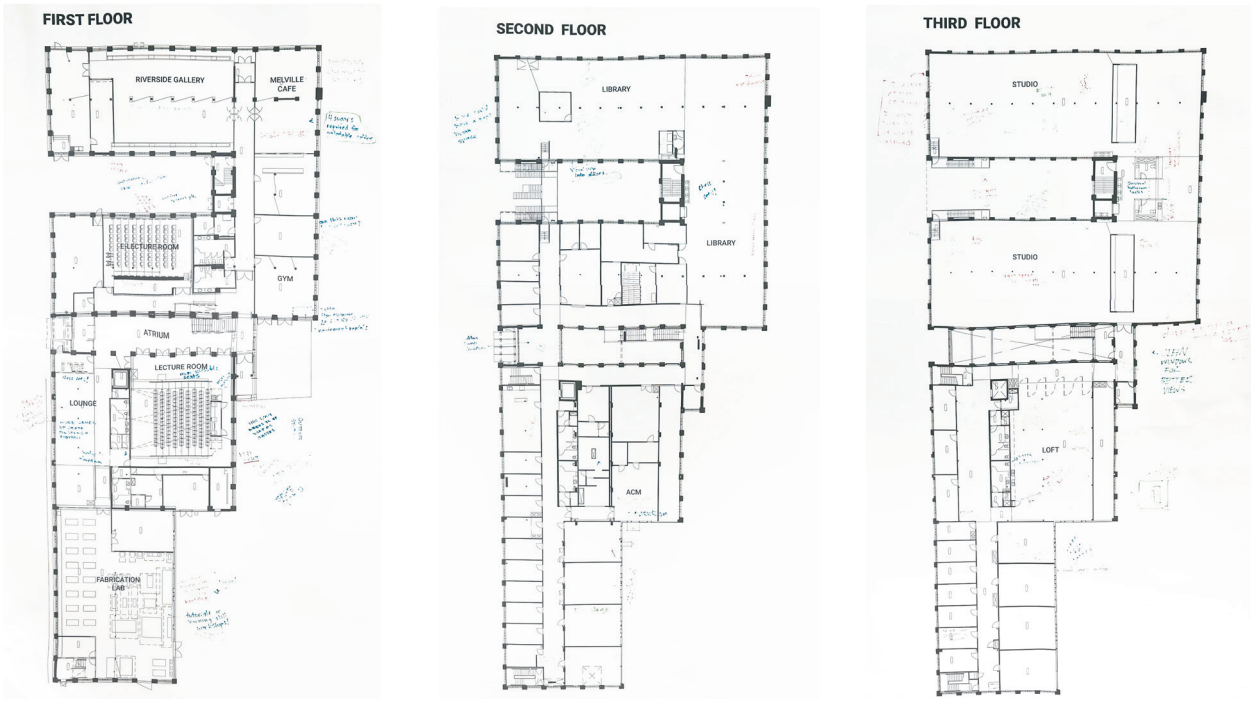


Figure 80: Results of the annotation session, unfortunately some of the writting fadded following the study.

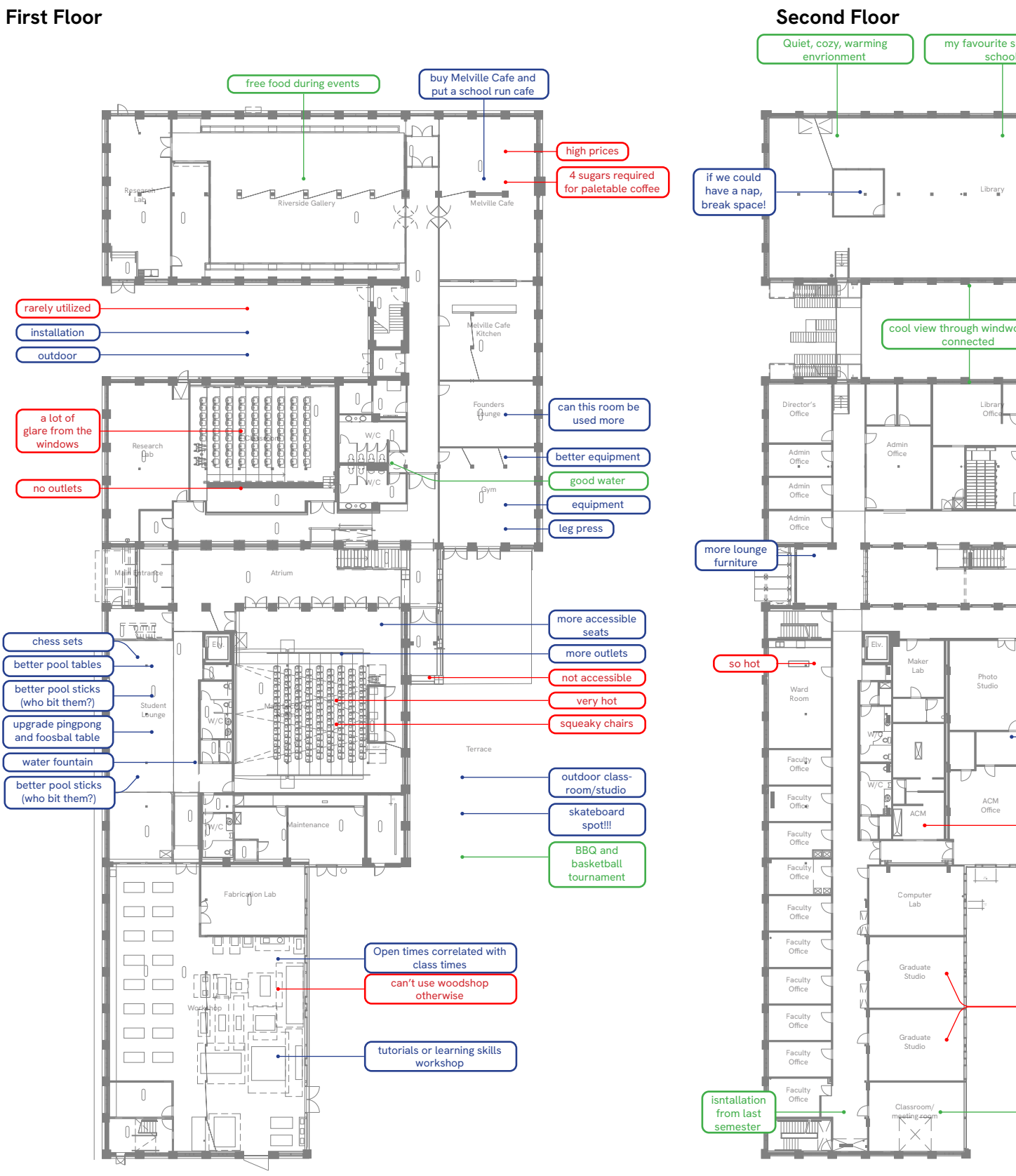
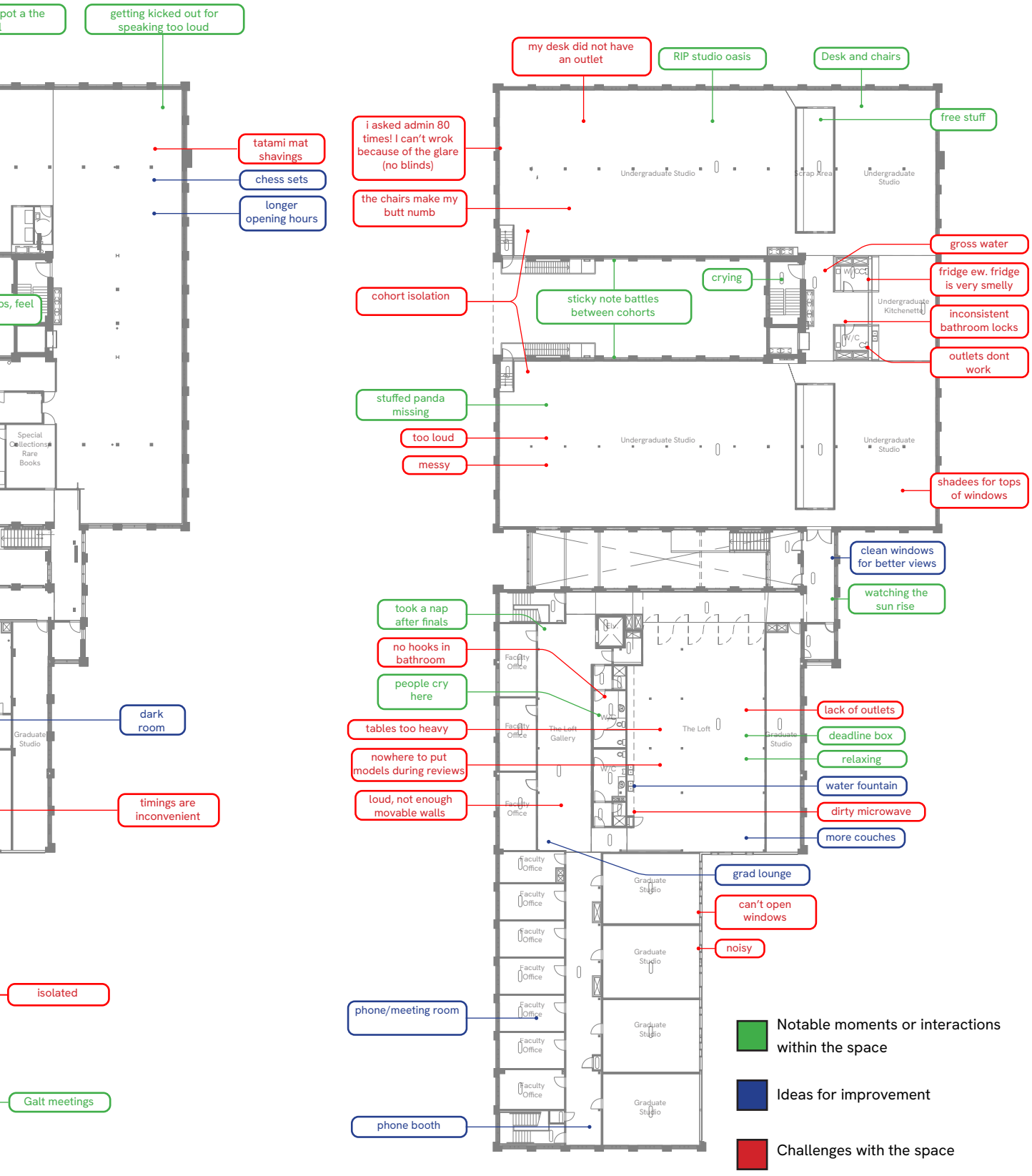


Figure 81: Diagram transcribing student feedback for clarity. The first floor received a significant number of blue notes, suggesting minor improvements and faculty, with the library being the main student-accessible area. The third floor registers the highest concentration of concerns and challenges, whic

Third Floor



to space, programming, and existing elements. In contrast, the second floor has fewer comments, likely due to its primary function as a space for staff ch is notable given that students spend most of their time there.

Key Takeaways from the Study

Observing the numerous comments in this study reveals distinct patterns in student perceptions of their space. Many remarks highlight concerns regarding relatively minor adjustments to existing elements, which, despite their scale, have a significant impact on student experience and well-being. These concerns can be categorized into five key areas:

- **Personal:** Noise levels, isolation, ability to rest, etc.
- **Furniture & Objects:** Updates, improvements, repairs, and upkeep.
- **Programmatic Adjustments:** Accessibility and changes to program function.
- **Building Elements:** Structural changes such as blinds, windows, and fixtures.
- **Spatial Considerations:** Enhancements to the existing space, including additions or extensions.

The first floor sees a mix of concerns regarding furniture and objects and programmatic adjustments. Additionally, there is notable student interest in expanding programmatic functions into the exterior spaces of the school. The second floor received the least comments, likely due to its primary function as a space for faculty and staff, mainly addressing programmatic adjustments within the spaces they occupy. The third floor, where students spend the majority of their time, emerges as the most critical area, with the highest concentration of feedback regarding all the categories and their challenges.

Ultimately, this study indicates that while the school's facilities are generally adequate, they require minor yet meaningful adjustments. Although these issues may seem small, their neglect fosters a sense of disregard among students, reinforcing feelings of insignificance and marginalization within the institution. From an administrative perspective, such concerns may not be considered high priority as they do not directly affect the fundamental operation of the school. However, their continued oversight perpetuates a notion of institutional indifference.

This situation presents an opportunity for students to take an active role in enacting change. While institutional regulations may restrict the direct implementation of improvements, the relatively minor nature of these concerns means they often go unnoticed. This opens the door for subtle interventions, tactical, nuanced, and seemingly invisible alterations that can significantly enhance the student experience. Here, scale becomes a critical factor: if a change appears as though it belongs, it is unlikely to be questioned. Certain aspects, such as building elements and programmatic adjustments, may fall beyond the scope of student-led initiatives, as they necessitate more substantial modifications to permanent institutional and physical structures. However, interventions can serve as catalysts, informing and inspiring broader changes within these frameworks, reshaping spatial viability and institutional dynamics.

Moving Forward With Intervention

Based on the study, the most suitable location for intervention is the Loft (see Fig.82), for two primary reasons. First, the Loft is one of the most frequently used spaces in the school by students, faculty, and occasionally community members, making it the most impactful site for intervention. Second, many of the concerns identified within this space lend themselves to subtle, adaptable interventions. Given that the Loft is a dynamic environment, constantly in use and undergoing adjustments, these interventions would likely integrate seamlessly into their surroundings (see Fig.83-84).

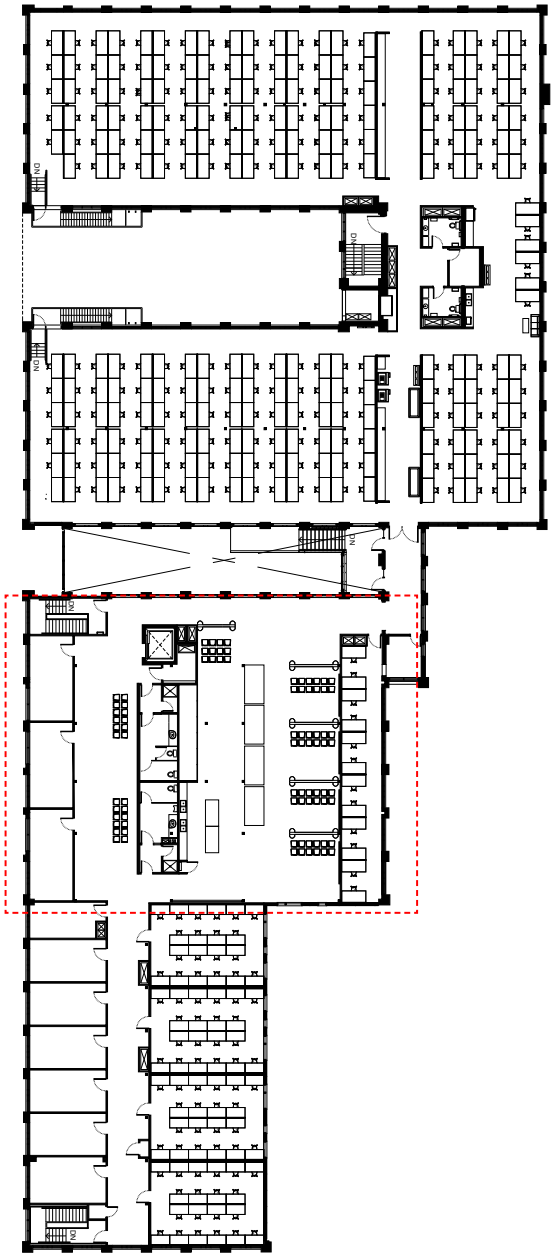
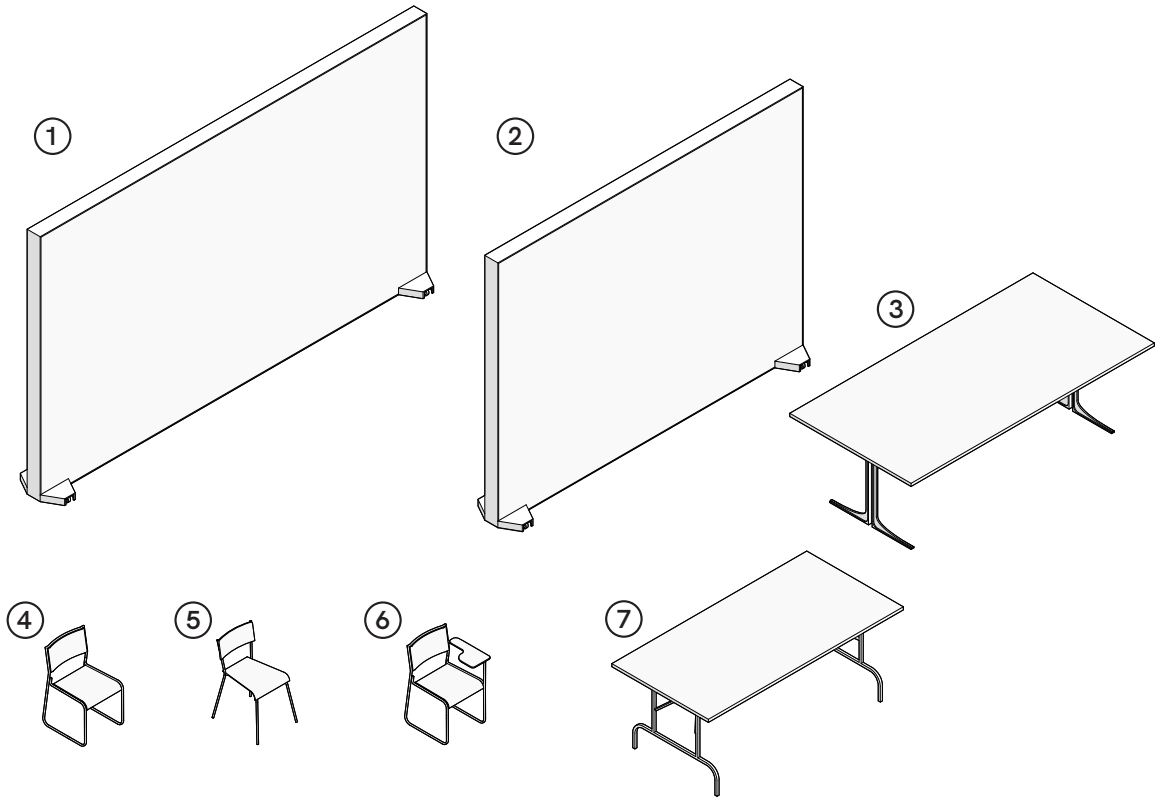


Figure 82: Thrid Floor Plan of the School of Architecture, highlighting loft space



1. Moveable Partition Large
2. Moveable Partition Small
3. Large Wooden Table
4. Metal Chair
5. Wooden Chair
6. Student Chair
7. Folding Table

Figure 83: Diagram illustrating a catalouge of furniture used in the Loft

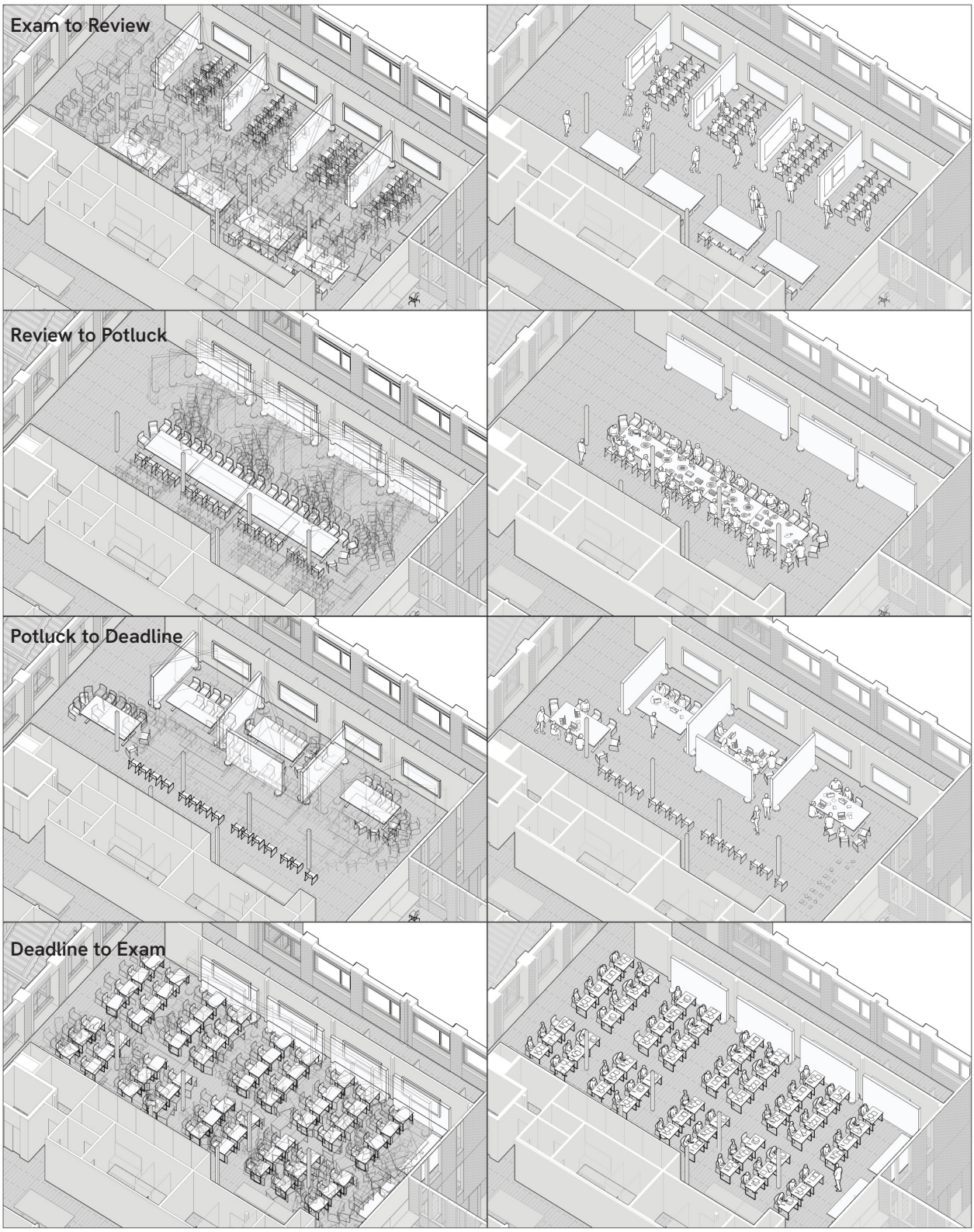


Figure 84: Diagram illustrating the various use cases of the Loft

Control and Accessibility in Design

This first experiment operates on a small yet significant scale, addressing a nuanced spatial oversight within the school's built environment (see Fig.85). The third floor washrooms near the Loft space lack hooks for belongings, a design decision initially made to mitigate risks of self-harm. While maintaining the importance of safety as a primary concern, hooks in other washrooms within the school raise questions about policy inconsistencies and the negotiation between institutional control and user agency.

The absence of this simple amenity creates an unwelcoming experience, particularly for visiting guests and community members, subtly reinforcing spatial exclusion and the ways in which institutional policies dictate everyday interactions with space. The omission of hooks, while seemingly minor, highlights the tension between standardized institutional decisions and the diverse needs of users. It underscores how design choices, whether intentional or incidental, shape patterns of use, comfort, and accessibility within the built environment.

This small yet noticeable exclusion also raises broader questions about how institutional policies respond to lived experiences and whether they allow for adaptation and user-driven modifications. In environments where architectural spaces are intended to foster collaboration and inclusivity, overly rigid or inconsistent design choices can inadvertently alienate certain users. By examining and addressing such overlooked details, it becomes possible to identify larger systemic patterns that influence spatial inclusivity and user autonomy, demonstrating how even small interventions can contribute to a more adaptable and considerate built environment.

To address this, the intervention introduces a 3D-printed hook, designed to support the combined weight of a jacket and a bag, ensuring usability while maintaining safety. The hook is engineered to break under excessive weight, effectively mitigating risks while restoring a basic yet essential form of spatial agency. This modification underscores a larger critique of control in institutional spaces, where design choices often prioritize top-down regulation over adaptability and user experience. In the context of the thesis, this intervention serves as a microcosm of broader architectural and institutional dynamics, where decisions made at the scale of policy and administration shape how individuals experience and navigate space. It highlights the relationship between imposed restrictions and the everyday realities of spatial use, reinforcing the idea that even minor design alterations can shift power dynamics and influence patterns of inhabitation.

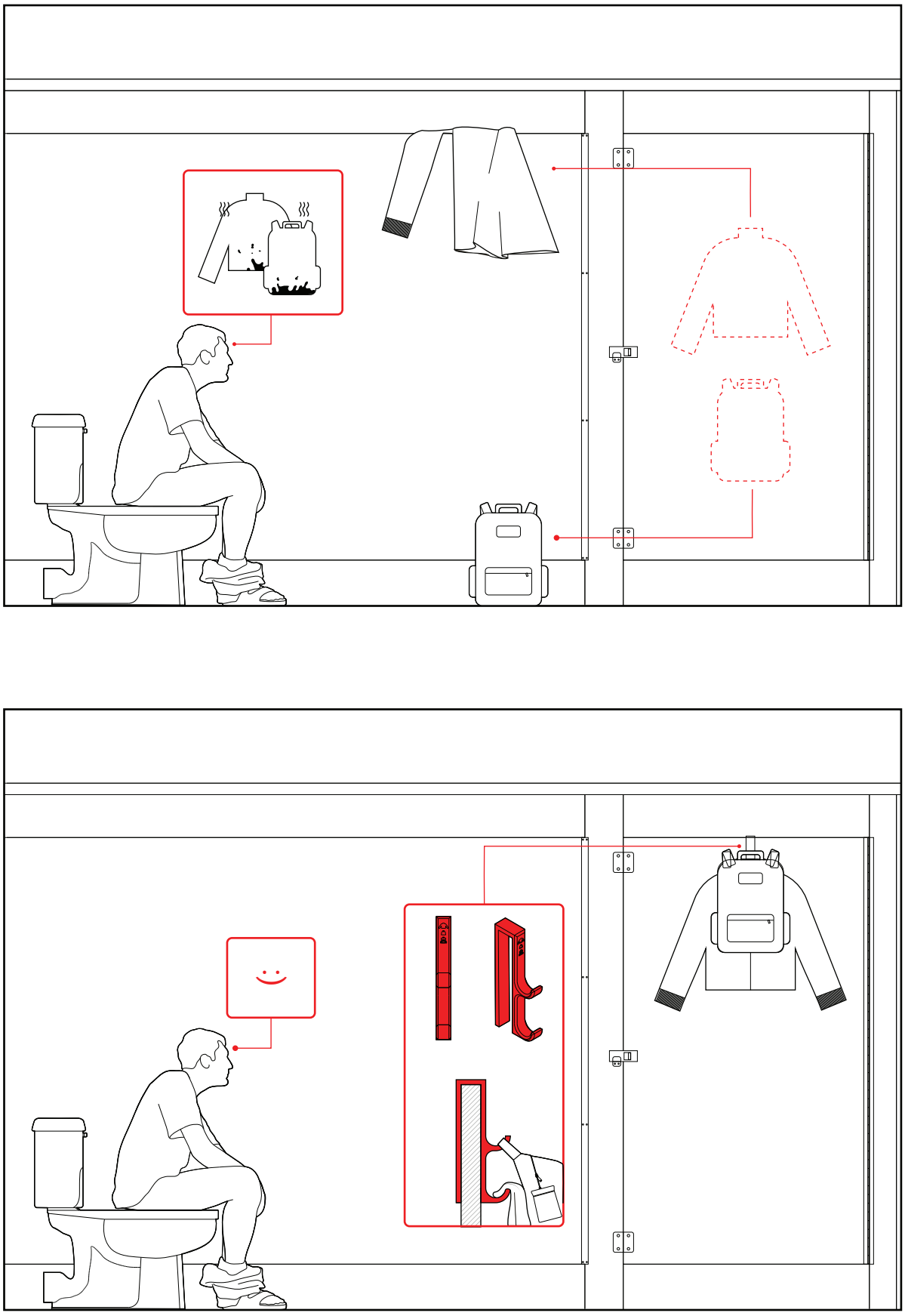


Figure 85: Bathroom hook intervention.

Adaptive Alteration

This experiment explores the potential for small yet tactical interventions to challenge spatial rigidity and enhance user agency within institutional environments. Architectural spaces, particularly within educational institutions, are often designed with fixed intentions that prioritize durability, order, or efficiency, yet these same qualities can inadvertently limit adaptability and user autonomy. While larger-scale architectural changes may be difficult to implement due to bureaucratic constraints, financial limitations, or institutional control, minor modifications to existing spatial elements can serve as tangible acts of intervention, demonstrating how users can reclaim and reshape their environments. By examining how incremental adjustments can influence patterns of spatial use, interaction, and accessibility, this experiment highlights the potential of nuanced transformations in institutional settings.

This intervention proposes replacing the footpads on the Loft tables with caster wheels, improving both functionality and adaptability within a highly active, multi-use environment (see Fig.86). The Loft area regularly accommodates student club events, final reviews, lectures, and informal gatherings, requiring frequent reconfiguration of its furniture. While the original design of the tables prioritized durability and longevity, ensuring they could withstand heavy use, this emphasis on robustness inadvertently compromised adaptability. The sheer weight and size of the tables make them difficult to move, requiring multiple people to reposition them, and in turn, restricting how users can shape their space to meet their needs. Additionally, the footpads, designed with less structural integrity than the tables themselves, are prone to breaking, often damaging the floor and making movement even more cumbersome.

A simple yet effective modification is replacing these footpads with caster wheels, which share the same ¼" diameter threads, allowing for easy interchangeability. This minor intervention enables users to effortlessly reconfigure their environment, making arranging tables for collaborative work, presentations, or social interactions easier without the risk of injury or floor damage.

By allowing users to easily modify their space, this intervention reinforces spatial agency and appropriation, challenging the idea that institutional environments must remain fixed and dictated by their original design. Although the Loft is already flexible in use, this adjustment in furniture empowers users to take ownership of their surroundings, shaping them according to their needs rather than adapting their behaviours to the constraints of the space. This shift demonstrates that spatial appropriation is not only a reaction to rigid design but an active means of reclaiming control over institutional spaces.

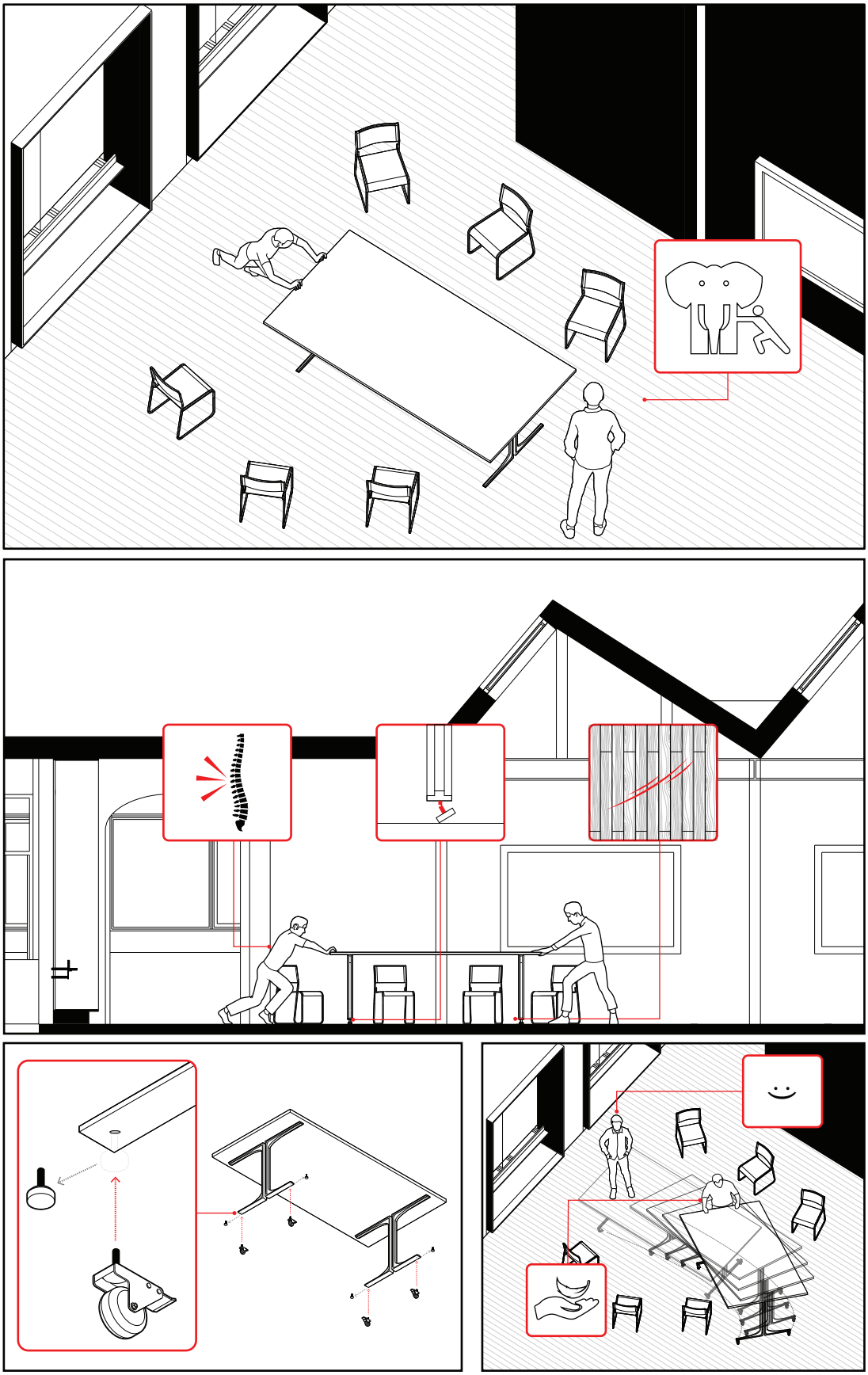


Figure 86: Caster wheel intervention for the tables located in the loft.

Spatial Transformation

The two previous experiments explored the potential of small-scale interventions and modifications and their influence on spatial adaptability, user agency, and the negotiation of institutional constraints. Expanding on these ideas, the next experiment introduces a modular, reconfigurable intervention that further investigates the relationship between spatial flexibility and user agency. Adapting the work of Yuanqing Hu, Guowu Wei, and Yan Chen on foldable thick-panel Origami Cubes, this intervention explores how temporary, collapsible structures can offer an alternative approach to fixed institutional layouts, allowing students to reshape their surroundings in response to shifting needs and circumstances (see Fig.87).[112]

Unlike permanent architectural features that impose a predefined use of space, this intervention provides a fluid, user-driven solution that aligns with the dynamic nature of design education. The modular cubes function as both model stands and partition walls, offering students greater autonomy over the arrangement of their review spaces. The ability to configure, reposition, and repurpose these elements fosters a more participatory approach to spatial design, where users are no longer passive occupants but active agents in shaping their environment.

Beyond their role in reviews, the cubes' inherent adaptability extends their utility, transforming into seating, tables, or other functional elements as needed. Their collapsible nature minimizes storage constraints, allowing them to be deployed and stowed away with ease, reinforcing the idea that institutional spaces should accommodate change rather than resist it. By allowing students to physically alter their surroundings, this intervention highlights the significance of temporary, tactical transformations as a means of negotiating spatial constraints and expanding the possibilities of architectural education.

Ultimately, this experiment underscores the value of adaptability in institutional environments, demonstrating how flexible interventions can create spaces that better reflect the evolving needs of their users. It challenges the dominance of fixed spatial configurations, advocating instead for an architecture that is responsive, participatory, and capable of evolving alongside its occupants.

112 Gu, Yuanqing, Guowu Wei, and Yan Chen. "Thick-Panel Origami Cube." *Mechanism and Machine Theory* 164 (October 2021): 104411. https://doi.org/10.1016/j.mechmachtheory.2021.104411.

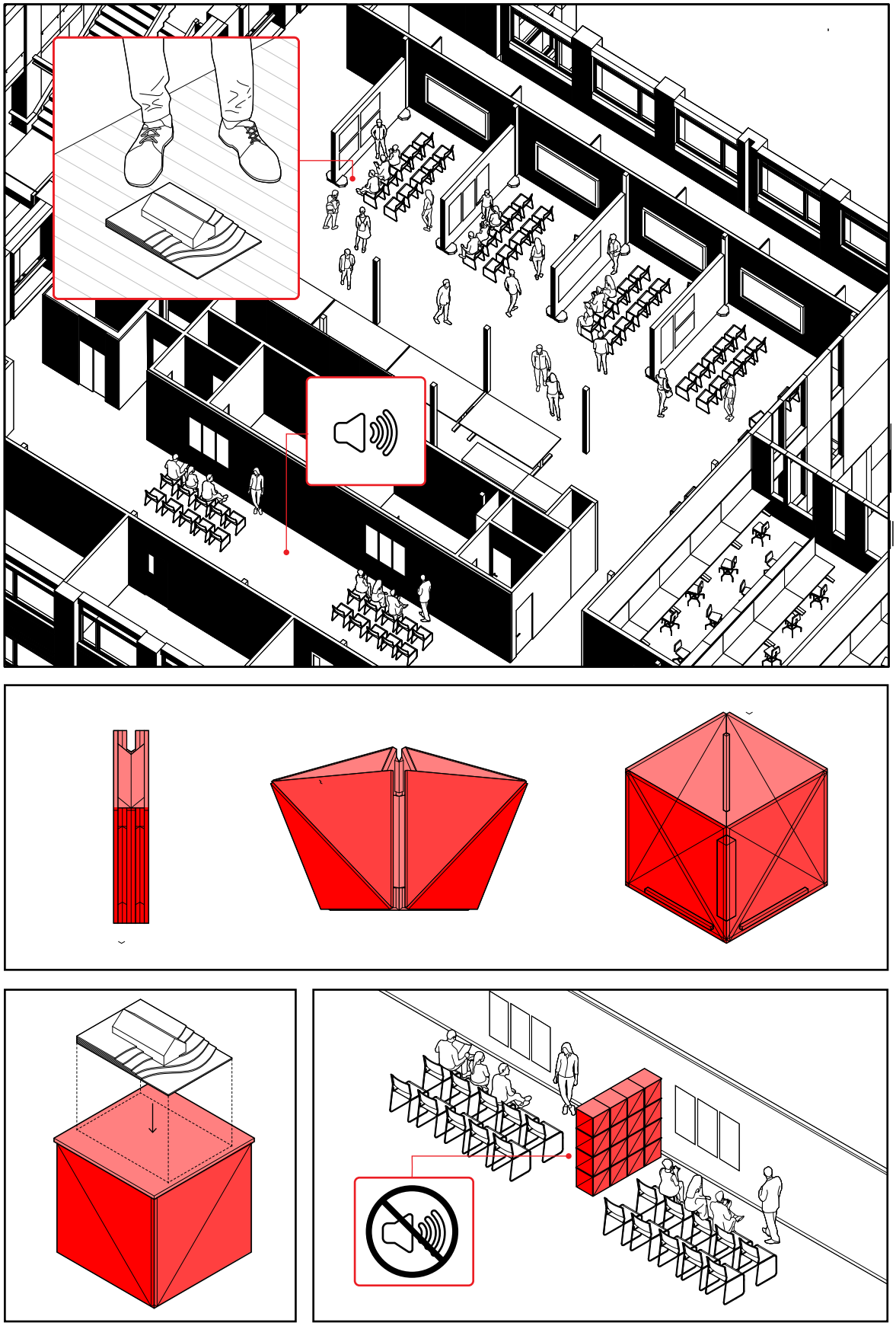


Figure 87: Origami plywood box used as a model stand and deployable wall.

Broader Contextual Relations, Re-opening the Conversation of Community Accommodation

The previous explorations of Tactical Urbanism, control and accessibility in design, adaptive alteration, and spatial transformation are centred on reclaiming space in and around the school. However, this thesis aimed to extend further into the city's urban fabric by securing a storefront along Main Street. This space would serve as a student-led extension of the school, reviving the BRIDGE model as a hub for events, lectures, and exhibitions while fostering stronger ties with local businesses and community members. However, moving beyond small-scale, informal interventions exposed the complexities and limitations of larger institutional and economic frameworks.

Significant barriers emerged, including market-driven real estate dynamics, where landlords prioritize commercial tenants over student-led initiatives. Even if space were to be secured, bureaucratic and financial constraints, such as insurance, liability, and university policies, posed substantial obstacles. Past examples, where landlords provided free or low-cost spaces, relied on unpredictable conditions, often tied to increased vacancy, temporary availability and impending sales.

Despite these challenges, engagement with local businesses revealed strong community interest in bridging the disconnect between the school and the city (see Fig.88). Business owners provided valuable support, offering insights, connections, and potential spaces for temporary use. However, institutional negotiations remain slow and uncertain, highlighting the stark contrast between grassroots flexibility and the inertia of formal urban development.

Given these realities, the most viable approach is to embrace transience rather than resist it. Instead of seeking a long-term occupation, this project pivots toward a mobile, tactical intervention, leveraging flexibility and adaptability through a modular "kit of parts" (see Fig.89-92) The Origami Cube intervention, previously explored in the Loft space, serves as an ideal precedent for this application. Its collapsible, multi-use design allows it to function as seating, partitions, or elevated surfaces, making it well-suited for a context where a permanent off-site occupation is not feasible.

This approach also appeals to building owners, as it requires no structural modifications or renovations, allowing for quick setup and removal. By operating within these constraints, the project preserves the agility of informal, small-scale interventions while strategically navigating the limitations imposed by real estate, institutional barriers, and regulatory frameworks. In doing so, it reinforces the core thesis: as architectural initiatives scale up, they inevitably confront the rigid structures of capitalism, bureaucracy, and institutional control.



Figure 88: Diagram illustrating current network opportunities.

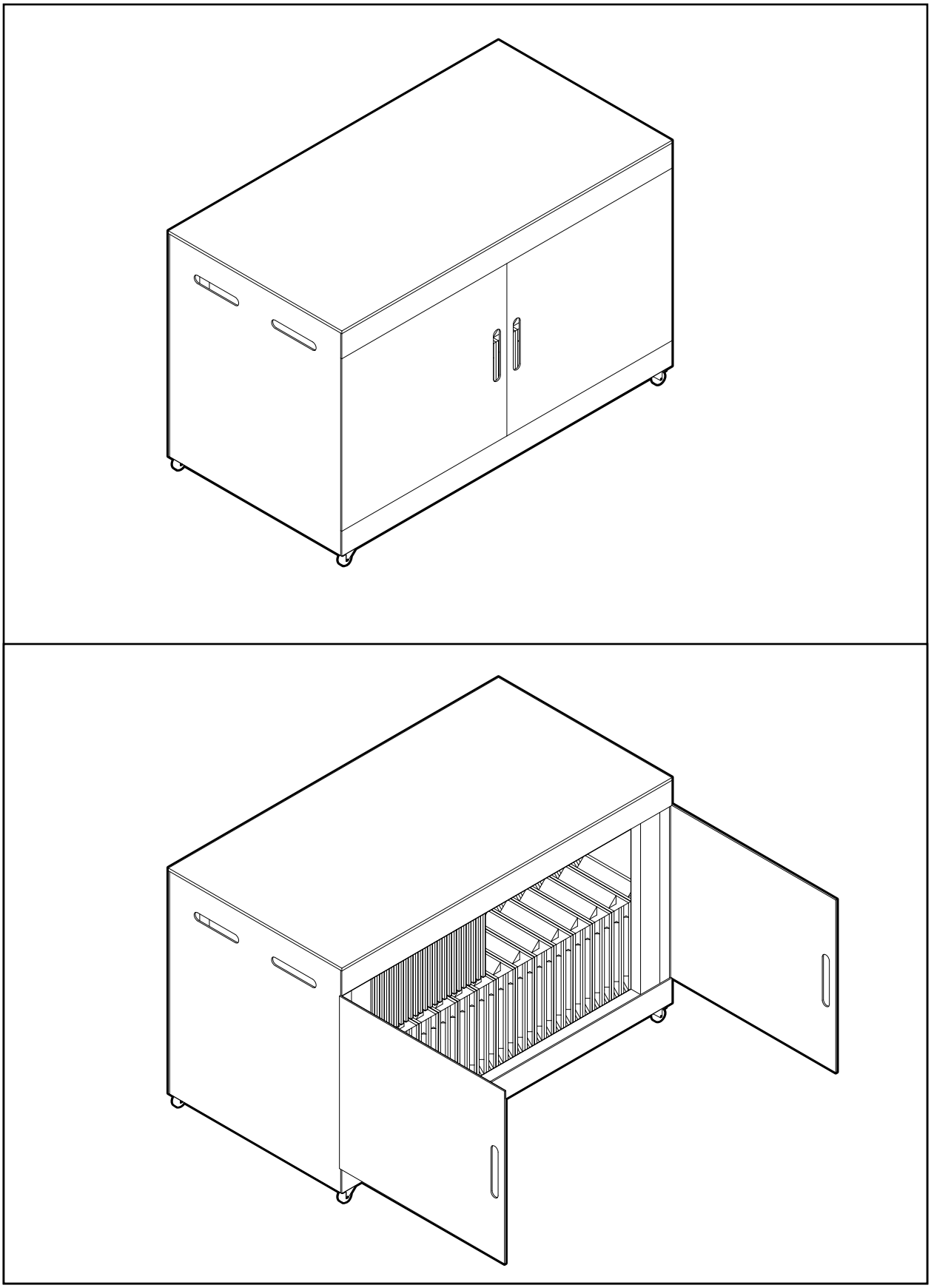


Figure 89: Mobile Kit consisting of origami boxes.

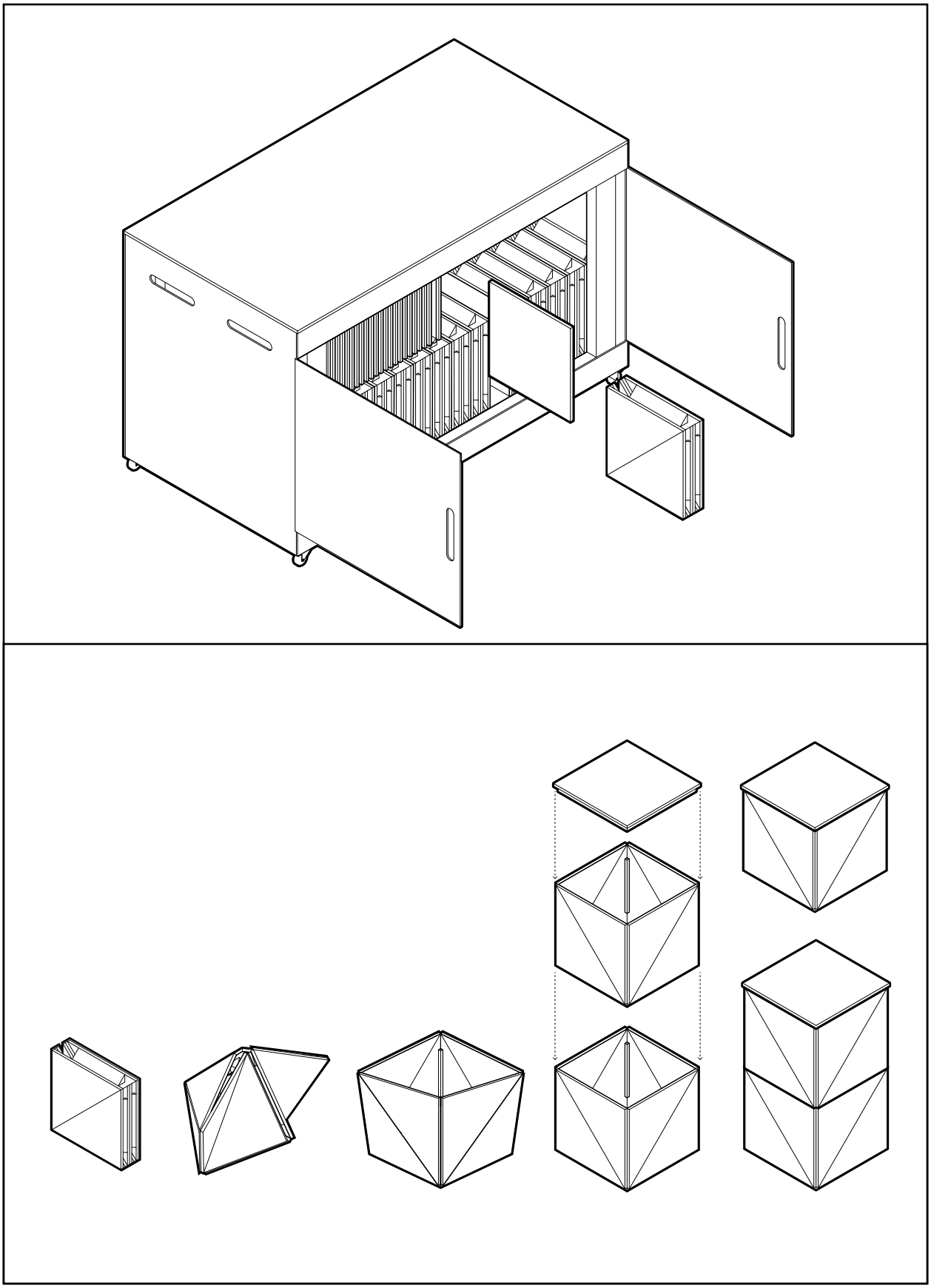


Figure 90: Stages of deployment of the origami boxes.

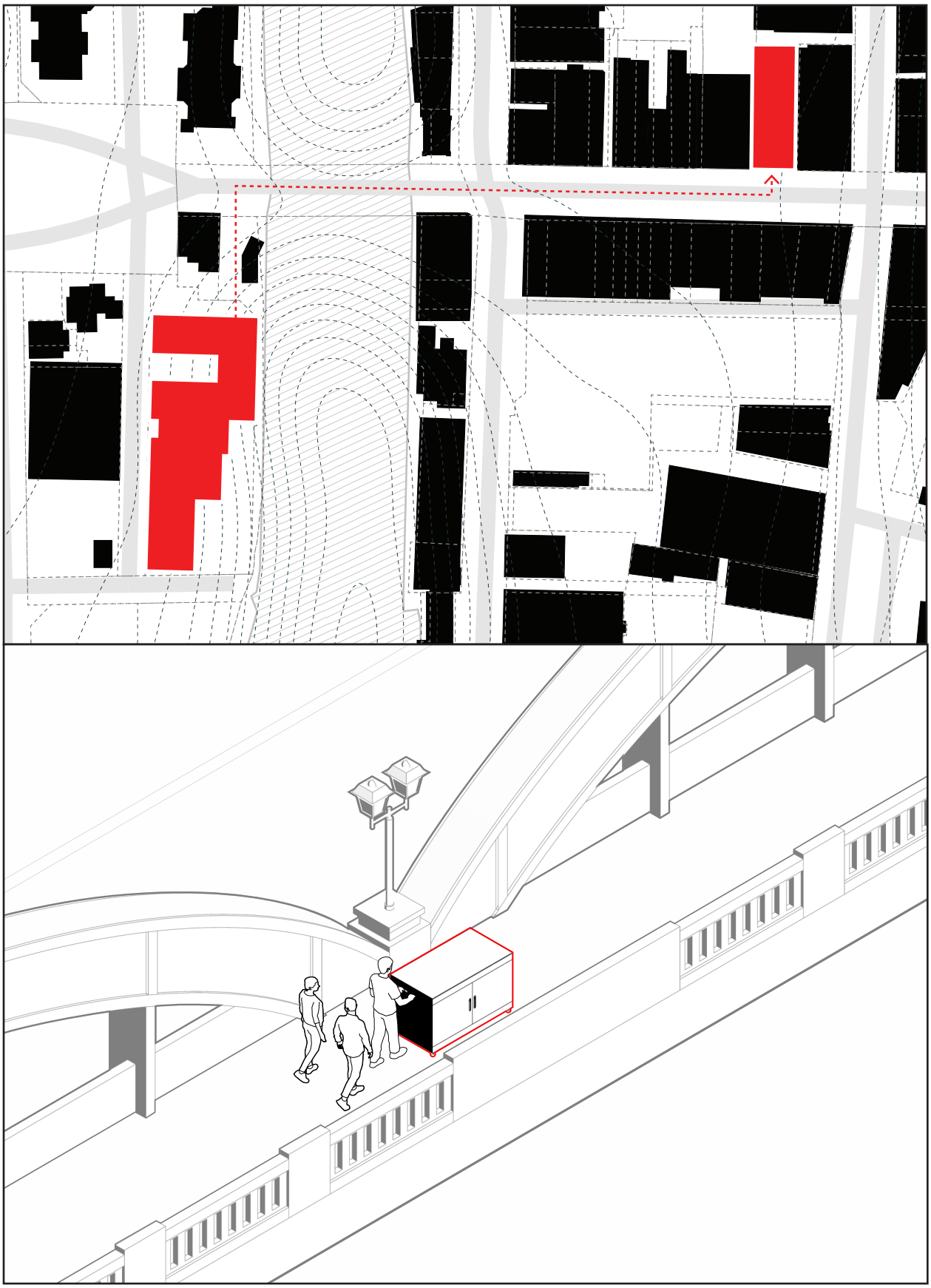


Figure 91: Application of the mobile kit to a hypothetical vancant space situated on Main st.

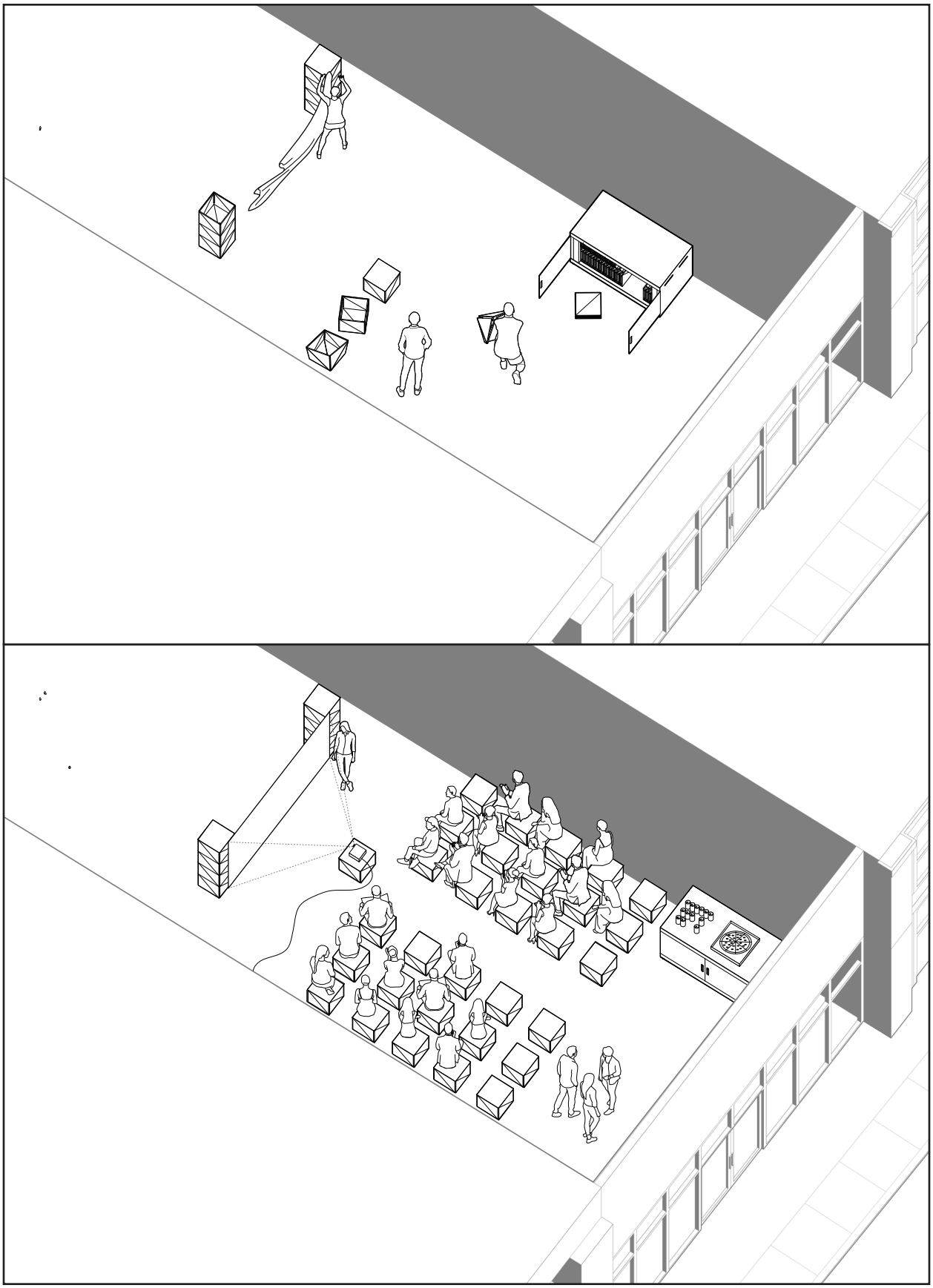


Figure 92: The set up process and the subsequent use for a lecture.

Conclusion:

The research and studies conducted in this thesis explore strategies to resist institutionalized capitalist systems embedded in architectural practice and education. By examining both theory and application, this work seeks to reframe everyday perceptions and interactions with space. Through this lens, the built environment emerges as both a tool for dismantling and a means of navigating the very institutionalized systems it helps construct. Beyond its conventional role as a mechanism of production, architecture can be understood as a dynamic and evolving network of interconnected actors, each wielding varying degrees of agency. This perspective positions design as a process of negotiation, capable of reorienting both those within and beyond institutional frameworks. In doing so, it underscores the built environment's capacity to reshape institutional constraints, facilitate informal action, and support socio-spatial resistance at the margins.

By applying the methodologies of Actor-Network Theory, architectural appropriation, and Tactical Urbanism, capitalist frameworks can be reinterpreted to expand the possibilities of spatial occupation and design. These alternative modes of thought challenge and disrupt the cycle of institutionalized capitalism embedded in architectural practice, while also promoting collaborative and community-driven approaches to spatial transformation. Such processes strengthen a community's resilience, amplifying the voices of those at the margins and enabling them to enact meaningful change. Furthermore, they create opportunities for direct, tangible interventions in the built environment, shifting the focus from capitalist-based production to socio-spatial empowerment.

These ideas materialized through a series of experiments in the form of interventions applied in and around the University of Waterloo School of Architecture. These interventions highlight ways to physically engage with institutional structures while demonstrating to students the potential for reclaiming spatial agency. Additionally, a network of resources, supportive individuals, and institutional limitations has been identified to help reestablish a connection between the school and the broader downtown Cambridge community. This ongoing process has planted a seed that, over time, may grow into a significant collaborative effort between students and the local community.

The overarching goal of these explorations is to encourage students to recognize the untapped potential within the spaces they inhabit and, in doing so, carry this awareness into their studies and future practice. More broadly, this research underscores the critical role of informal, marginalized, and transient spaces as adaptive instruments, filling the gaps where institutions fail to meet spatial and social needs. However, these spaces exist in a fragile balance, increasingly threatened by capitalist urbanization and institutional control. While efforts were made to establish a student hub within the downtown core, the enduring tension between spatial autonomy and institutionalized power remains a persistent challenge.

As urban development accelerates and capitalist forces further restrict access to adaptable spaces, the viability of marginalized spaces as lasting sites of resistance comes into question. Institutions often operate within a framework that prioritizes risk management and control over user agency, reinforcing hierarchical structures that dictate how space is accessed and appropriated. This dynamic creates an imbalance in which spatial governance leans toward regulation and safety, rather than empowerment and agency. While alternative models, such as Rural Studio, adopt a “we” approach, bridging institutional and community engagement, most institutions uphold a structure that fosters an “us vs. them” dynamic, distancing students and communities from participatory involvement in decision-making.

As institutions navigate this tension, the challenge is to be truthful in recognizing how they operate and to acknowledge how their policies, structures, and pedagogies either reinforce or resist capitalist-driven spatial control. The question remains: how can institutions cultivate a more inclusive and engaged approach, one that prioritizes agency alongside safety? By reframing architecture as a discipline that extends beyond production and prescription, it becomes possible to foster an ethos of collective agency, where designers, students, and educators collaborate with, rather than impose upon, the spaces and communities they serve.

Ultimately, this thesis challenges architects, students, and educators to reconsider their roles, not as passive designers producing commodities, but as mediators and active participants in engaging and navigating the margins. Between systems of control and levels of agency, prescription and adaptation, formal and informal spaces, architectural practice and pedagogy must confront the gaps. Resisting imposed social and spatial systems is central to embracing architecture’s inherent fluidity, informing the designer’s ability to transform the built environment into a truly living, evolving process. It is within the margins, the spaces that institutions neglect, the voids between rigid structures, the cracks where new possibilities emerge, that architecture finds its most radical and transformative potential.

APPENDIX

School History

Introduction

Before entering the theoretical framework of the space, the history and context of the Waterloo School of Architecture need to be understood. The complex political hierarchies and individual endeavours of the school administration, faculty, and students played a significant role in defining the school's culture and spatial qualities. From the mid to late nineties, the School of Architecture was located on the periphery of the Kitchener Waterloo main campus. Initially, it was located in an industrial warehouse on the edge of campus, and then it was later relocated to one of the Environmental Science buildings closer to campus. Both buildings required more space to support faculty and students and more desk space, lecture rooms, and natural light. Many well-known and successful Canadian architects emerged from these less-than-ideal spaces despite these circumstances.

The school decided to move locations in the early two-thousands, opting for a larger and better-equipped building to support the growing student population. Facing many financial and administrative challenges, the School of Architecture successfully moved from Kitchener Waterloo to downtown Cambridge into a repurposed Silk Mill built in 1919. From there, the school continues to operate but now seemingly faces the same issues that caused its original move.

The following chapter documents the progression of the move into the new building, highlighting the reasoning and challenges the school faced during that time. The entire process was roughly documented through archived online daily bulletin article posts from the early 2000s by the Editor Chris Redmond and various other authors. Following this is a transcribed interview with the former Director of the School of Architecture during the move, Rick Haldenby. These two sources of information will provide an in-depth understanding of the many factors and actors involved in the relocation.

January 3rd, 2001 – Architecture Likes Cambridge plan – Barb Elve [1]

This article is the earliest mentioned regarding the relocation of the University of Waterloo School of Architecture.

A group of business leaders in Cambridge proposed relocating the School of Architecture to a site next to the Grand River. Initially, the school's Director, Rick Haldenby, dismissed the idea as "totally unrealistic." However, growing support from the Cambridge community led him to reconsider the potential of a satellite campus in the downtown core of Galt, Cambridge.

The article highlights that the school had faced a space shortage for about a decade. Haldenby had initially hoped to keep the school on the south side of campus, serving as a landmark at the university's entrance. However, he acknowledged the difficulty of achieving this.

Several advantages of the Cambridge location were identified, including a scenic riverfront site and vacant land capable of accommodating an 85,000-square-foot building. Although the site was a brownfield—previously used for industrial or commercial purposes and contaminated with chemicals—Haldenby expressed confidence that the land could be cleaned. He emphasized that the "extraordinary level of community support" was instrumental in advancing the proposal.

January 19th, 2001 – Review of Architecture Program[2]

This article discusses the University of Waterloo Senate's review of the Architecture Program, which they praised as offering a "high-quality program, one of the best in Canada." The program was one of the first four to be reviewed under procedures adopted by the school in 1977. Despite the program's success and reputation, the review highlighted a significant need for more space.

A visiting review team, composed of academics and architects from around the world, found that while the students and support services were of the highest quality, the program faced space shortages in the design studio, offices, instructional areas, library, and other facilities. Additionally, the faculty-to-student ratio raised serious concerns. Both the Director and the dean stated that resolving the space issue would require new funding opportunities from the university.

1 Elve, Barb. "Architecture Likes Cambridge Plan." Edited by Chris Red. *Daily Bulletin*. January 3, 2001. https://bulletin.uwaterloo.ca/2001/jan/03we.html.

2 Redmond, Chris, ed. "Review of the Architecture Program." *Daily Bulletin*. January 19, 2001. https://bulletin.uwaterloo.ca/2001/jan/19fr.html.

February 7th, 2001 – Architecture: a Matter of Space[3]

Land and building funds were offered for the site next to the Grand River, along with support from business leaders and an anonymous donor. With the introduction of the Masters of Architecture program, which would bring over a hundred new students, the pressure for additional space increased. The Cambridge promoters proposed "a world-class facility, albeit in a remote location." In response, the architecture faculty voted unanimously in favour of the move while they monitored student interest through surveys.

Concerns about the move also surfaced, including increased operating costs, isolation from university life, access to library services, student housing, and difficulty taking courses in other departments.

Rick Haldenby pointed out that students from other programs take only 2 percent of architecture-related courses. At the same time, only 4 percent of architecture students take courses in different departments, typically in the evenings.

March 9th, 2001 – UW agrees to Cambridge Deal – Barb Elve[4]

The group of Cambridge business leaders, now known as the Cambridge Consortium, reached an agreement with the University of Waterloo Board of Governors. The memorandum outlined several conditions that must be met before the school can be relocated:

A 3.5-acre site on Water Street, donated by Austrian architect and investor Oskar Ganahl

Removal of contaminants from the site

An international design competition for the new School of Architecture

Construction of an 85,000-square-foot building and an endowment fund to cover maintenance

An endowment fund dedicated to off-campus issues, including student services and enhancements to academic programs

Superbuild funding from the province, applied for by the city of Cambridge

After extensive discussions about the challenges of elective courses and the relationship between the main campus and the satellite campus, the board and senate concluded that "the pluses outweigh the minuses."

The project, which is primarily funded by local investors rather than the university, is expected to exceed $30 million in total cost. The Cambridge Consortium, which initially included four business leaders, grew to twenty individuals who pledged to raise $10 million. The city of Cambridge will contribute another $7.5 million, with the remaining $12.5 million expected to come from provincial grants. The new school's anticipated completion date is September 2004.

Cambridge is projected to benefit from this move by introducing a new cultural presence and attracting local and international visitors. The university expects the relocation to diversify its national and international profile, expand its regional influence, and free up space on the main campus. The partnership with the city and business leaders has also fostered a new community of supporters. However, students have raised concerns about transportation links between the satellite school and the Waterloo campus.

December 12th, 2001 – Change of Plan for the Architecture School[5]

The initial request for Superbuild funding from the provincial government did not come through, causing plans for a new building on the brownfield site to fall apart. In response, the Cambridge Consortium, with approval from the Director of architecture, purchased an 84,000-square-foot building south of the original site, located on the west side of the river. The Riverside Silk Mill, formerly the Tiger Brand factory, was selected due to its existing structure. It offered ideal spaces for large studios, lecture rooms, and other student amenities.

3 Redmond, Chris, ed. "Architecture: A Matter of Space." *Daily Bulletin*. February 7, 2001. https://bulletin.uwaterloo.ca/2001/feb/07we.html.

4 Elve, Barbara. "UW Agrees to Cambridge Deal." Edited by Chris Redmond. *Daily Bulletin*. March 9, 2001. https://bulletin.uwaterloo.ca/2001/mar/09fr.html.

5 Redmond, Chris, ed. "Change of Plan for the Architecture School." *Daily Bulletin*. December 12, 2001. https://bulletin.uwaterloo.ca/2001/dec/12we.html.

Although the Superbuild funding fell through, the city and the Cambridge Consortium committed to honouring their original funding promises; the Director expressed optimism that the school could be relocated before May 2003 if the university administration and funding arrangements align.

March 8th 2002 – Funding for Architecture Confirmed – UW News Bureau[6]

Jim Flaherty, the Minister of Superbuild, announced that the new School of Architecture will receive an allocation of $4.1 million. The Superbuild program is directing $40 million to enhance infrastructure in the Waterloo region through the Millennium Partnership initiative. The relocation of the School of Architecture aligns with this plan and the province's Smart Growth initiative, which aims to utilize existing resources, revitalize the environment, and promote the growth of downtown urban areas.

Four main partners share the funding for the relocation project, with the Cambridge Consortium proposing $12.7 million from the private sector, the City of Cambridge contributing $6.25 million, and Superbuild and Industry Canada each providing $4.1 million. At this stage, the first three partners were awaiting confirmation of federal funding from Industry Canada.

MAY 1ST 2002 – AIMING FOR AN 'EXEMPLARY' BUILDING - *BARBARA ELVE, FROM TODAY'S GAZETTE*[7]

The School of Architecture has issued a call for an architect to renovate the old Silk Mill building with the aim of creating an exceptional yet modest design. The renovation will focus primarily on the interior, including offices, studios, labs, workshops, a library, a gallery, and an auditorium. The building will also receive new doors, windows, a roof, and upgrades to the building services. The school expects that these interior renovations will cost around $9.5 million.

The exterior brickwork will remain unchanged, with some improvements to the façades facing the river and Queen's Square. Expressions of interest are due by May 9th, 2002, and occupancy is expected by September 2003.

July 13th 2004 – 'Inspiring' Community in a Crowded School[8]

The Canadian Architectural Certification Board's report from their late 2002 visit to the school echoed the same praises and concerns expressed in the January 19th, 2001 review. While the report commended the students and the quality of their work, it continued to raise concerns about the limited space available to them. However, it acknowledged that the school would relocate in the coming months.

The school has made significant progress in addressing previous concerns, with improvements in faculty research, establishing research centers, professional advisory, and fundraising for the new building. However, the issue of increasing faculty numbers has not been resolved due to the university's funding constraints. Since the previous review, the number of full-time faculty has declined, raising concerns about the student-to-faculty ratio, especially with the anticipated increase in the student population at the new building.

The extension of the master's program from 12 to 16 months, the tuition increase, the enrollment of more international students, and the expanded research opportunities offered by the new building are expected to help alleviate some of the financial strain.

August 20th, 2000 – Map of Campus Adds Cambridge[9]

The University of Waterloo officially became multi-campus by adding the Cambridge campus to its map. The back of their four-page brochure shows this expansion, which includes a sketch and directions to the Cambridge campus. The inclusion of the Cambridge campus also emphasizes the importance of the Grand River, symbolically connecting both campuses through its

6 UW news bureau. "Funding for Architecture Confirmed." Edited by Chris Redmond. *Daily Bulletin*. March 8, 2002. https://bulletin.uwaterloo.ca/2002/mar/08fr.html.

7 Elve, Barbara. "Aiming for an 'exemplary' Building." Edited by Chris Redmond. *Daily Bulletin*. May 1, 2002. https://bulletin.uwaterloo.ca/2002/may/01we.html.

8 Redmond, Chris, ed. "'Inspiring' Community in a Crowded School." *Daily Bulletin*. July 13, 2004. https://bulletin.uwaterloo.ca/2004/jul/13tu.html.

9 Redmond, Chris, ed. "Map of Campus Adds Cambridge." *Daily Bulletin*. August 20, 2004. https://bulletin.uwaterloo.ca/2004/aug/20fr.html.

winding path.

October 22nd, 2004 - Architecture School Opens Today - Martin van Nierop[10]

The School of Architecture has officially opened, establishing a new campus and home for architecture students. Rick Haldenby stated that every space exceeded his expectations. The final renovation costs totalled $14.7 million, with an additional $12.5 million in endowments to support operating expenses. The City of Cambridge contributed $5 million, while the federal and provincial governments each provided $4.1 million. The Cambridge Consortium helped raise the remaining funds, bringing the total to $27.2 million.

The new building's improvements, including enhanced space and natural light, stand in stark contrast to the dull interiors of the previous facility, fostering more significant activity and energy within the space. Several publications have featured the building, and it is anticipated to be a contender for several architecture awards. Levitt Goodman Architects led the project, with Natoma Architects as consultants and Alberici Constructors as construction managers. The Cambridge community has welcomed the new building and its students incredibly.

Summary of Interview with Rick Haldenby

In this interview, Rick Haldenby, the former Director of the University of Waterloo School of Architecture, discusses the program's original buildings, the move to downtown Cambridge, and the school's current state following the pandemic and administrative challenges.

Initially, the university housed architecture students in an industrial, shed-like building on the edge of the main campus. Despite its isolation and lack of amenities, students and faculty saw it as an opportunity for autonomy, allowing students to appropriate the space and make it their own creatively.

The program later moved to a building closer to the main campus and had to share it with the Environmental Studies program. This arrangement was met with resistance by the students. Despite the convenience of the location, the new building was considered inferior to the original "shed." Students opposed the move, prompting discussions about relocating the entire program to a different city. Led by Rick Haldenby and the architecture faculty, they unanimously decided to move to Cambridge, Ontario. The City of Cambridge, local business leaders, and federal and provincial grants primarily funded the project, with little substantial support from the university.

After the original site for the new campus fell through, a new opportunity emerged: an old silk mill building, which provided a base structure for the school's revitalization. Despite encountering numerous political and financial challenges, the school was constructed and warmly received by the Cambridge community.

The School of Architecture flourished, developing a solid relationship with the community. The school and the city supported each other, using the school's spaces for community installations and activities. However, over time, critical supporters of the school naturally withdrew, and financial adjustments and growing financial burdens strained the relationship between the school, the community, and its students. The COVID-19 pandemic further exacerbated these challenges, bringing the school to a standstill.

The school is currently in recovery, with a focus on community-oriented activities and efforts to reconnect with its roots. Rick maintains optimism that the school's original spirit and strong community ties will be restored.

Conclusion

The *Daily Bulletins* and Rick Haldenby's recollections offer valuable insights into the challenges faced during the relocation of the School of Architecture. From the early days in the industrial shed to the present Cambridge campus, one crucial factor has consistently supported the School of Architecture community: autonomy—the ability to self-govern. This autonomy empowered the community to mediate their spaces, improve them, and advocate for better environments, allowing them to shape their surroundings according to their needs.

The initial space provided by the University of Waterloo, an industrial shed, was insufficient for the faculty and students. This inadequacy led to informal architectural interventions as the community adapted the space to make it more functional and desirable. This process of independent spatial transformation made the value of space more apparent to the university, prompting a move to

10 Van Nierop, Martin. "Architecture School Opens Today." Edited by Chris Redmond. *Daily Bulletin*. October 22, 2004. https://bulletin.uwaterloo.ca/2004/oct/22fr.html.

the ESII building. However, this new space was even less suited to the school's needs, becoming a catalyst for relocation. Lacking support from the university, Rick Haldenby's vision for the school pushed him to seek alternatives, leading him to explore new modes of funding and solutions.

This process highlights the duality of institutionalization, where institutions both suppress and perpetuate autonomy. Institutions, like universities, often establish limiting factors through control and conformity, as seen in the lack of funding and disregard for adequate space at the School of Architecture. Despite these institutional constraints, users—students, faculty, and staff—continuously find ways to adapt, fostering a sense of agency. In this way, they create spaces that not only benefit their community but also allow them to make those spaces their own.

Autonomy arises from motivation, agency, and the desire to enact change. Without these driving forces, spatial evolution stalls. To instigate meaningful change, societal values must be critically examined and shifted. However, before such transformation can occur, it is essential to first understand the nature of society itself.

Full Interview

***note: the interview was recorder via audio and transcribed using speech-text, there may be grammatical errors or mistakes with names.**

The facilities provided by the university since its founding were... inadequate. Over the summer of 1969—and I wasn't here at that point (I started in the fall of '69)—I came for an admissions interview in April '69 at the Engineering building, and by September, the school had moved off campus into what can only be described as a really low-grade industrial shed on Phillips Street. We were also relocated from the Engineering Faculty to something called the Division of Environmental Studies, which later became the Faculty of Environmental Studies, now known as the Faculty of Environment.

But, you know, the facility wasn't a university building—it was a shed! Oddly enough, we loved it because it was

and seemed completely out of place at a time when universities across the country were building lots of new facilities. I mean, the University of Waterloo got a school of architecture and housed us in a concrete block building with open-web steel joists. It was big—that was its only real virtue. This space fostered a **strange culture of independence and autonomy,** and a lot of fun things happened there. It created a feeling that we were on our own.

Eventually, the university was convinced that we should move back on campus. The selection process to hire architects was strange, but ESII was designed. By that time, I was a professor, and the students were upset about how bad and small the new building was. We were actually giving up space and facilities to move onto campus. So, in 1982, we moved on campus, but the building was awful, and so were the studios. They had low ceilings and windows only on one wall. The faculty offices, except for a few, were tiny cubicles. We were also stuck with Environmental Studies, who clearly didn't want us there. It wasn't a great relationship, and we stayed there for 22 years. In hindsight, it's hard to understand why anyone even came, considering how bad the building was.

The real turning point came when we started the graduate program. In 2000, we went from having no graduate program to having one larger than all the other graduate programs in the Faculty of Environmental Studies combined. This created tension, as they had to give up space in their building. The frustration was palpable. Despite numerous funding opportunities, the university never showed the slightest interest in helping us solve our space problem. I was the Director, and I eventually formed a committee of external people to help us address the issue. There was a famous moment when the great Canadian structural engineer, Morgan Ellis, who was on my committee, stood up at a meeting and said, "Look, Rick. Don't. Ever. Ask me or anyone else to give you money to add to that dog of a building. Build something else."

It was a challenge. The faculty was frustrated, and the university showed no indication of understanding our situation. There was essentially no hope. Their priorities were elsewhere—in engineering and computing. We didn't seem to have any leverage to secure the space and facilities we needed. Yet, we were growing. We had a graduate program with excellent students, winning awards and accomplishing great things.

At a certain point, we had several faculty and school meetings, and people started saying, "We should go somewhere else, somewhere that would appreciate us." We had some preliminary conversations with other universities to see if they might offer better support. Around that time, I started a research project under a SSHRC (Social Science Humanities Research Council)-mandated program called the Community University Research Alliance (CURA).

As part of this project, I collaborated with a professor from the planning school, and we were researching the role of design in mid-sized cities. The way the system worked was that, to get federal funding, you had to secure funding from community partners. We managed to get three cities and the region to each commit $25,000 a year to the CURA.

I lived in Kitchener at the time and had led the initiative to organize a national design competition for the city, so I had connections there. I approached the city of Kitchener, and they agreed to commit. Brock Seasons from the planning school had connections in the city of Waterloo, so he secured Waterloo's commitment, and he also reached out to the region. That left Cambridge, but none of us had any connections there or knew much about the city. I volunteered to go down and make some inroads.

We had already been receiving support for our lecture series from Ariscraft for at least 10 years. So, I called up my contact at Ariscraft and asked if he could arrange a meeting with people in Cambridge. He set up a meeting with the executive members of the Chamber of Commerce. I went down to Cambridge to talk to them about lobbying the City Council, as we didn't know anyone there or have any connections. I had only visited Cambridge a few times, but I loved it. I thought it was a fabulous place, and a far better fit for the School of Architecture.

On November 3rd, 2000, I gave my pitch to the Chamber of Commerce about supporting the CURA. One of the executives

stood up after the presentation and said, "Sure, fine, we'll support you with City Council. But what we really want to know is, what would it take to move the School of Architecture to Cambridge?" He wasn't the first to suggest it—the guy from Ariscraft had already mentioned that Cambridge would be a better location for the school—but Jim Cassell was the first person to say it outright. To be honest, people were ready to leave. We were on the verge of losing faculty members, people who were just fed up with the University of Waterloo.

So, I said, "What it would take to move the School of Architecture to Cambridge would be a great site and a lot of money." And he responded, "OK, well then, it's as good as done."

That was on November 3rd, 2000. Within a few weeks, he and his colleagues had organized a meeting at Langdon Hall with all the major community leaders and key figures from the private sector. I went down and gave my first-ever PowerPoint presentation, which was terrible. In fact, a student had put it together because I had never even heard of PowerPoint at the time.

Out of that meeting came the Cambridge Consortium, and from that moment on, it felt inevitable that the move would happen. The owner of the site where the Mill restaurant is now located, just north of the Mill, agreed to donate the land. From there, we began thinking about how to proceed with the building, and we started working with students and faculty to develop a plan.

We had to raise all the money ourselves because the university wasn't going to contribute—and they never did. When we looked into building a new facility on that site, we discovered it was contaminated with coal tar, which would have posed a huge problem. Our studies suggested that with the funds we could potentially raise, we might be able to build a 70,000-square-foot building, which was decent considering the less than 30,000 square feet we had on campus. However, we believed we needed closer to 100,000 square feet, and things started to look tough.

At that point, the owners of this building (the current School of Architecture) approached the Cambridge Consortium. They had been trying to convert it into loft condos, but due to the floodplain, the ground floor couldn't be used for residential purposes. Additionally, there wasn't a condo market in Cambridge in 2002. One of the members of the Cambridge Consortium ended up buying the building, and they scrapped the condo plan. I invited my colleagues down, set up large tables where the library is now, and we had lunch. At the end of lunch, I asked, "So, do you like this place?" and everyone said, "Yeah, it's fantastic." I replied, "Well, this is our future home."

There was some discussion, as a few people were drawn to the idea of having a famous architect design a new building for us. But I was skeptical. Then, Johnny Straub stood up and said, "OK, let me get this straight, Rick. If we come here, we'll get more space. Cheaper. Faster. And in a better location because, obviously, this is better." He glanced out the window and added, "...and we won't spend the next three years arguing about what architecture is." Everyone cheered, and we were on board.

That kicked off the process. A lot happened after that, including the architect search, which was quite a wild and crazy ride. It would take a long time to explain all the twists and turns. There were even a few near-death experiences along the way. At one point, I had to lie down in front of City Council and tell them they couldn't fire Stan Saitowitz, which led to some tough negotiations. There was a lot of pressure, but in the end, it worked out. It wasn't perfect, but we got Levitt Goodman as the architects, and we carried out this incredible process with the students. We formed a committee of students and faculty and worked together to write the building program. We decided on the size of the graduate studios and other details. It was a beautiful process of engagement.

Before the renovation, we held community events in the building, calling it "Miracle on Melville," and thousands of people attended. The whole process felt magical. We got involved with the local library and gallery and formed a partnership to operate the gallery, which no other school of architecture had at the time.

There's always a personal dimension to projects like these, as well as an institutional one. As an institution, we're doing fine. The school doesn't need me anymore. I don't know what would have happened if we hadn't made the move, but it wouldn't have been good. The school was in trouble, and the university was clearly not willing to help us.

Unfortunately, after the Director of Cambridge Libraries and Galleries retired, that relationship didn't thrive, and it eventually fell apart. Now, we're in charge of the gallery, which is fine, but we don't have a full-time curator or professional staff to manage it. Poor Adrian has to take care of it as part of his job.

Then there's the whole story about the café. The university's food services refused to come down here because they claimed our student body was too small. I asked them, "So, you're not going to provide food services here?" and they said no. I asked them to put that in writing, which they did. Armed with that, I went to the president and said, "We want to do an RFP to get a café." The president, David Johnson, who was very open-minded, agreed, saying, "Yeah, OK, do it." So, we did it. It's not perfect, but it's better than just having a coffee and doughnuts stand—which the university wasn't even willing to provide because we didn't have enough students. According to them, if you don't have 1,200 students, you don't even get coffee and doughnuts.

There are all kinds of stories like that.

We aimed to build it for under $100 per square foot, and we succeeded. But, of course, that involved me going out and talking to people in various trades—wood suppliers, concrete companies, steel stud manufacturers, compact shelving vendors, and hardware suppliers—while also securing a lot of in-kind donations. The university didn't build it; the city did, and they were willing to use a construction management process. As you might know, with a stipulated sum contract, donations are often meaningless because the contractor won't give you any credit for them. But with construction management, we were able to control more of the process. For instance, we put out 41 different contracts for this building. For the concrete, we asked for two bids: one for supply and install, and one just for installation. We were waiting to hear if Saint Mary's Cement would donate the materials, and in the end, they did. So, we got a good price for installation, saved hundreds of thousands of dollars, and the project came together. It was an adventure. It all happened 21 years ago, which still seems incredible to me.

We consulted with students about the design of their desks, fabricating prototypes for them to try and rate. It was a fascinating process. There was so much energy during that time, and the community was incredibly supportive when we moved. The building was open 24 hours a day, and we hosted a wide variety of events. People wanted to hold weddings in the loft, and we organized public events in the space. Students loved working there. I was incredibly idealistic about how open and connected to the community the space could be. We held tons of community events in the first few years. However, it

wasn't sustainable. Security issues, conflicts over space usage, and the strain on students eventually became too much.

Idealism only goes so far. If you look at the documents from that time, you'll see we did all kinds of things—like turning the courtyard into a park, converting the riverbank into a beach, and working with Christie Digital to create projection mappings across the river. It was a very exciting time of exploring what a real relationship with the community could look like. But eventually, the Library and Gallery withdrew from the Design at Riverside project. We even participated in the Venice Biennale in collaboration with Design at Riverside, faculty, and students, which was amazing, but things don't last forever.

At the core, we have the School of Architecture. We've been working to absorb and integrate architectural engineering into the program. I had clear ambitions to bring more students and new programs down here. At one point, we were hoping that by the end of the decade, we'd have 1,500 students. We even talked to the Fine Arts department about joining us here, but they decided against it. When the building across the street became available, we thought it could be a great opportunity to expand and bring Fine Arts over.

In 2012-2013, we proposed a program I conceived called "Design for a Digital Economy," which they later named "Integrated Design." I wasn't too fond of the name because it's easily confused with other integrated design processes, but we came very close to getting it approved. It was approved in principle by the Engineering Faculty Council. However, at the end of 2013, when I stepped down as director, the new director decided to pause and reconsider the whole thing. Unfortunately, it never came back, and now it's unlikely that an undergraduate program will come to fruition.

The goal has always been to expand. Honestly, what we hoped to achieve here was to create a design campus. We envisioned Architecture at the center, with Architectural Engineering on one side and an open-ended creative design program on the other, and perhaps even Fine Arts. If we could create that kind of cluster, we'd be looking at between 1,500 and 2,000 students, which would make a big difference. That would be enough to make it its own faculty.

Waterloo only has six faculties, which is a very small number. When we moved down here, the university proposed switching Architecture back from the Faculty of Environment to Engineering. We told the Dean of Engineering at the time that we wanted a fair amount of independence—we didn't want to just be engineers. The Dean said, "Well, the level of autonomy you're asking for is similar to that of a faculty. So why don't you just become a faculty?" I replied, "Waterloo would never accept a faculty this small." He then mentioned that he came from the University of Toronto, where there are three faculties smaller than the School of Architecture. "Why don't you just ask the vice president?" he suggested. I said, "Because he'd laugh at me." Dean Sedra replied, "That's ridiculous. It's a serious proposal." So I suggested, "Why don't we both go ask him, but you do the asking."

We went to the vice president's office, and after some pleasantries, Amit Chakma, the VP, asked, "So, what brings you here?" Adel explained, "We're discussing Architecture rejoining Engineering, but since they're 28 kilometers away, wouldn't it make sense for them to be an independent faculty?" Chakma laughed, and Adel looked at me and asked, "How did you know he would laugh?" I responded, "You've only been here three years. I've been here since 1969. I know this university, and there's no way they'll let us do that."

Chakma then said, "OK, well, you're going to be part of Engineering, and that's great." And it has been great. Engineering has been very supportive. The Architectural Engineering (AE) initiative is still growing, although AE students only spend two out of their eight terms here. Last week, I was on campus talking to a group of AE students about their capstone project, which involves designing a building on the parking lot here to accommodate the entire AE program. Interestingly, when the first group of AE students came down, they hated it. By the second year, they loved it, and this class even submitted a petition to move the entire AE program here.

I think it would be fantastic, and I believe we should revive the other design program. If we had 500 Architecture students, 500 Architectural Engineering students, and 500 design students, we could go to the university and make a strong case for a design faculty. Unfortunately, times aren't great for university expansion. Our provincial government is not exactly heavily invested in post-secondary education, to say the least.

I've always been drawn to big ideas and accomplishing things people thought were impossible. We got Rome, we got the graduate program, and we got Cambridge.

We've been here for two decades, and people sometimes say, "Maybe we'd be better off on campus." Well, we were *not* better off on campus. Waterloo is a wonderful university, and I'll defend it because it's a place that accepts radical and risky ideas—many universities wouldn't. I might complain about the lack of support we received, but I'll always remember David Johnson. He embodied that spirit. He would say, "Rick, there's no point in coming here to complain because there's nothing I can do about them. So come with a solution." And I would say, "OK, David, I'll bring a solution." And I did.

One memorable incident happened after our meeting at Langdon Hall. We went to City Hall for a meeting with the leaders of the Cambridge Consortium, the four businesspeople behind the move of the School of Architecture, and we had an appointment to meet the newly elected mayor. It was November of an election year, and the election had been incredibly close—just 21 votes separated the two leading candidates. There was a recount, and we were scheduled to meet whoever won. The morning of our meeting, the recount results were announced. Doug Craig, not Greg Derocher, walked into the room. Derocher, who was the executive director of the Chamber of Commerce and had been part of the original "great site and lots of money" meeting, had lost. Doug listened to our pitch, and, with the city manager and CAO in the room, said, "This is a great project. We've been looking for something for downtown Galt for 25 years. Nothing has worked, nothing has happened. This is the answer." Then, with great enthusiasm, he said, "I'm raising the flag of architecture over Cambridge!" On the very morning of his election, he committed $5 million. The city manager looked absolutely horrified.

We left that meeting feeling elated. Shortly afterward, we attended a budget meeting in the Council Chamber at the old Italianate City Hall. We had prepared presentation panels—thanks to one of my students—and I made a presentation, as did one of the Consortium members, asking the city to allocate money for the School of Architecture. Everyone was excited, but they said, "You can't do this. This isn't the process. You can't ask for money at the budget meeting." There were eight members of the council, plus the mayor. Four voted in favor, four against. The mayor cast the deciding vote and gave us the money.

This was a closed-door meeting, so there was no press present.

But the meeting ran late, and some reporters were waiting in the lobby. As soon as the meeting ended, the doors opened, and a reporter from *The Record* saw our presentation panels and the businesspeople involved. She put two and two together, and the next day's headline read, "Council asked to support relocation of the School of Architecture to Cambridge." We hadn't even spoken to the University President yet!

It was a tense moment, but David Johnson appreciated it because, as always, it was a solution. Two days later, he called a meeting in his office. Fortunately, the Vice President of Academics, who didn't like the School of Architecture, had resigned by then. In his place was a former VP with whom I had a strong personal relationship. He was supportive of the school. At this meeting, David, the new VP, the Dean of Environment, the VP of Admin and Finance, and I sat down to discuss the situation.

The former VP brought in a board with pictures of the mill site and said, "Do you really want to move to this dump?" David quickly intervened and said, "Jim, fortunately, you're not part of this discussion." Then David said, "This meeting will be short. I have only two questions. Number one, does anyone think the School of Architecture doesn't need new facilities?" Of course, everyone knew we needed them. The place we were in was awful—it's hard to describe how bad it was. It was so depressing. And now, it's even worse, with the studios turned into cramped office spaces. So, nobody disagreed that we needed new facilities. Then David asked, "Does anyone have another idea for how we'll get them?" Nobody did. So, he said, "OK, the meeting's over. We're going."

David was a big supporter of the move, and he still loves this building. Sometimes on weekends, he brings his guests and friends down to visit.

Anyway, these are the kinds of stories I could go on about endlessly. It all felt like magic, and at the end of the whole process, I remember thinking there were countless moments when it could have all gone wrong—times when something could have derailed it completely. It felt like threading a row of needles, and if any one of them didn't line up, it could have thrown everything off. But somehow, it all worked out. It's a bit of a shame we didn't have just a little more funding to fully utilize some of the spaces, like the courtyard on Melville Street. We envisioned it as an amphitheater, and it would've been great to put a roof on it. We should've done more, and maybe we will in the future. It's an interesting space with a lot of potential if it were set up properly.

The building is about 20 years old now, and it needs some love. I remember a young professor from Harvard visited the building just the week before we were set to open. She walked around, looked closely at everything, and at the end, she said, "I hope you realize you've done something here that nobody's ever done. This space is very special."

Can you tell me a bit more about the older buildings? You started off in the shed and then moved to ES2. What made everyone love the shed?

Well, to be honest, nobody *loved* the shed. It was a typical 1960s industrial shed with a small office wing at the front. Behind that were large industrial spaces with almost no windows—there were just two, I think. The studios were rough and tumble. But there was surplus space, and you could do things in there, and we did. The culture of the school was a bitter reflection of being in such an unwelcoming, non-campus space. It didn't feel like a university building at all. Can you imagine a university putting its school of architecture in a place like that? The building next to us was Valley Blades, where they made saw blades, and they had a giant white metal box beside us. On Friday nights, we'd project movies on the side of that building, and people would gather in the parking lot to watch. Later, they built another industrial shed south of us, and as the school grew, the university leased some space there.

The school was founded in '67, and I arrived in '69. We didn't reach full enrollment until about '72, so we needed more space. That's why the university leased another industrial building across the parking lot. You felt completely isolated—just this group of architecture students in a totally unpromising space. Across the street was the Raytheon plant, which manufactured missile guidance systems. I remember looking out and seeing a big rack of missiles coming out of the building as they tested the guidance systems in the field across the street. That was our view in 1969.

Waterloo was small back then—just 26,000 people. The university wasn't technically on the edge of town because north of the university, they had built something called Lakeshore Village. Despite there being no lake, there were suburban houses to the north. But to the east and west of the university, it was mainly industrial, with farmland to the east. There was even an apple orchard behind the School of Architecture. It was surreal.

I grew up in the center of Toronto. I went to high school at Bloor and Spadina, so I was a city kid. I thought the world ended at Broadview to the east, Bathurst to the west, and Eglinton to the north. Beyond that was, in my mind, a wasteland.

One of the third-year students even kept a pet pig in the studio. We also discovered that all the parking lots from the surrounding industrial buildings drained into ours. There was a sunken loading dock connected to our building, and if you blocked the drain, you could fill it up and turn it into a makeshift swimming pool. So when you ask, "What was good about those places?" Honestly, nothing. They were awful—except that we made them ours. There were no classrooms, so we had to go to campus for lectures, which was a 25-minute walk. It always made us feel like we weren't part of the university.

When they finally moved us on campus, there was a lot of resistance. The building we moved into wasn't much better than the old one, and in many ways, it was worse. We lost half of our space, and the ceilings in the studio went from 22 feet down to about 9 feet. There were windows, but only on one side of each studio. We also lost a sense of freedom.

There was a culture that developed in the school when we were in those terrible spaces. We even had an exhibit called *Then and Now: The Phillips St. Generation,* focusing on the last group of students at Phillips Street, which included people like Bridget Shim, Howard Sutcliffe, and Stephen Teeple—some of the best-known graduates of our school. Others like Terry Boake, Val and Rick, and many senior architects across the country and beyond either finished their education at Phillips Street or started there and finished on campus. There was a lot of resentment about moving to campus, and the director at the time didn't seem to care. People were frustrated, asking, "How can you ask us to move into a terrible building that's less than half the size of what we had?" He had a tendency for lofty rhetoric, and he stood in front of the school and said, "If the university has the nerve to build this building, I have the nerve to move into it," and we were all thinking, "What? What does that even mean?" We survived as an institution, but that building drained people's enthusiasm. It was just a bad space that wore everyone down over time.

Do you think that sense of autonomy and freedom from those initial buildings helped the design process or education?

Absolutely. One of my favorite slogans is "for the mura"—outside the wall. We were, in so many ways, outside the wall. We were outside the wall of the metropolis, outside the wall of the university. That sense of separation carried over into the Co-op program too. We had this incredibly ironic situation where, especially in the Phillips Street buildings, we were a school located in a space that didn't look like any architecture school ever, in a small community of fewer than 30,000 people, and yet students were working in offices in places like London, Stockholm, New York, and Toronto. It created a culture of independence and self-sufficiency. Our students were different.

I'll never forget, just before we moved, the former Dean of Environment, a woman I didn't get along with very well, came to me and said, "Rick, this move is going to ruin the school." I asked, "What do you mean? Why?" She said, "The reason your students are so creative is that they've lived with adversity. Now that you're moving to a place where they'll have everything they need, the creativity will dry up." I said, "I have a different take on this. If students feel respected and like they're in a place where people care about them, I think they'll do just fine." But I thought it was incredible—the "starving artist" theory that adversity breeds creativity, and that somehow justified the poor conditions we had. Sure, oppression can generate creativity, but it's not a strategy for fostering it.

That brings me to my next question. You mentioned that there used to be many installations around the school, but in recent years that doesn't seem to happen as much. Do you think that's a result of institutionalization or bureaucracy?

That's an interesting question. I don't know… Maybe things have shifted a bit. There was a time when there were quite a few landscape-type interventions happening. But it's not like there's no activity. We just had the Rome show on Main Street.

When I was the director, I really tried to support and sustain these outreach activities. I felt strongly about it because, honestly, we wouldn't be here without the city of Cambridge. If the city hadn't given us $10 million, applied to the federal and provincial governments for another $9 million, agreed to build the building, and provided project management support, we wouldn't exist here. The city brought us here because they wanted us here. I saw it as part of my mandate to reach out to the people of Cambridge and show them what they had brought into their community—450 to 500 of the most creative people in the country, right in their core.

When Anne Bordeleau became director, she had a different approach. She was only here for 18 months, and during that time, she was under pressures I never had to deal with. The university had changed its budget model, which made her life almost impossible. There were changes, like locking the building, and when Greg Hayden and Mary Meisner left Cambridge Libraries and Galleries, the new leadership didn't maintain the relationship we had built. The culture shifted.

Then COVID hit, and we closed our doors and essentially disappeared. But I'm optimistic. Things are bubbling up again. The night market is one example, and there will be others. Conversations are happening with the City of Cambridge. I'm on the Arts and Culture Advisory Committee, and we're planning a big party in November to celebrate the 20th anniversary of the school.

I don't believe our outreach and creative activity in the community is history. I think it can be revived and will continue to be. As we think about expanding the school, we should remember the understanding we had with the city from the beginning. The city was committed to making the School of Architecture the best it could be, and we were committed to supporting the city's aspirations for urban and cultural development. That was our pact, and we fulfilled it. Things got a little diverted along the way, but I see it moving in the right direction again. I know Maya and Andri are certainly committed to that vision.

There was a golden age where we were doing projects for the city, participating in the Mayor's Celebration of the Arts and Unsilent Night, and creating installations. But I don't think that was just a moment in the past. I believe those things will come back, maybe in different forms, but they are coming back.

We always thought of the building's design in three layers. The ground floor, except for the workshop, was meant to be more public. The middle floor was for support, and the top floor was for the students. That was the vision, and I think it still holds.

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